TEXTILE TECHNOLOGY DIGEST

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ABSTRACTS

FIBERS A

NATURAL FIBERS A 1

Asbestos-rubber jointing materials.

A. E. Williams. *Textiles in Ind. 1:* 21-25 (July, 1956).

The properties, manufacture, testing, and use of asbestos fibers bonded with rubber as jointing and packing material are discussed and illustrated with diagrams.

Comparative quality characteristics of selected growths of cotton in the 1955 crop.

J. M. Cook (U. S. Dept. of Agriculture). *Textile Research J. 26:* 534-542 (July, 1956).

Fiber and spinning test data on commercially grown varieties that were bred to produce staple lengths of 1-1/32 to 1-3/32 inches are included in this study.

Cotton quality and fiber properties. Part 5. Effects of fiber fineness.

D. J. Leitgeb and H. Wakeham (Textile Research Institute). *Textile Research J. 26:* 543-552 (July, 1956).

The purpose of this research was to evaluate fiber fineness as a cotton quality factor, especially with regard to processing characteristics and fabric performance. Increasing fineness, or decreasing Micronaire, was found to increase roving and yarn strengths, and to decrease spinning end-breakage rates. Maximum yarn strength was reached at lower twists for the finer cottons. Neps increased with increasing fineness. The fabrics of the finest cotton possessed more strength, more abrasion resistance, more elasticity, and a softer hand than the fabrics of coarser cottons. Resin treatment eliminated most of the fabric advantages of the finer cottons. Increasing fineness also caused greater fabric shrinkage and somewhat poorer crease recovery. The blended lot was generally equal to the lot of medium fineness in both processing characteristics and fabric quality. In general these observations suggest that distinct benefits can be obtained by the use of finer cottons, provided the accompanying increase in neps can be tolerated. 17 references.

Self-heating of cotton.

V. A. Gartman. *Tekstil. Prom. 16, No. 1:* 28-31 (1956); *in Russian.* Through *BCIRA 36:* 257 (1956).

The physical manifestation of the effect of moisture on cotton is its temperature increase; this was found to cause a considerable loss in fiber strength, and to enhance the growth of fungi during storage of the cotton. Experiments have shown that self-heating of the cotton in bales commences at a moisture content of between 12 and 15%. The mechanism of the phenomenon is discussed and measures for preventing it are pointed out.

Effect of cotton fiber bundle break elongation and other fiber properties on the properties of a coarse and a medium singles yarn.

L. A. Fiori, J. E. Sands, H. W. Little, and J. N. Grant (Southern Regional Research Laboratory). *Textile Research J. 26:* 553-564 (July, 1956).

Forty-three cottons were processed into a series of yarns of varying twists. Fiber break elongation, along with five other fiber properties (length, fineness, strength, length variability, and maturity), was correlated with yarn break elongation at twists for maximum skein strength, maximum single strand strength, and at two constant twists (4.00 and 5.00 T.M.). Yarn strength and break elongation were found to be directly related for the commercially grown short and medium staple cottons, but the long staple and the experimental, strong-fibered cottons were found to be anomalous in that they produced yarns whose strength was disproportionate to their fiber break elongation. Based on multiple correlation analyses, fiber break elongation ranked first and strength ranked second in importance as contributors to yarn elongation for a 30/1 yarn at twists for maximum strength. Average stiffness and toughness index of fibers and yarns are suggested as quality indices for evaluating processing efficiency. 24 references.

Sorption of water by wool.

J. J. Windle (U. S. Department of Agriculture). *J. Polymer Sci. 21:* 103-112 (July, 1956).

A simple model for the wool-water system is proposed and the expression for the vapor-pressure isotherm corresponding to it is derived.

MAN-MADE FIBERS A 2

Technical and production data of 23 principal synthetic fibers, metallic, stretch and bulk yarns produced in the United States.

Am. Textile Reptr. 70: 67-85 (July 19, 1956).

This 1956 revision is in three sections: (1) technical and production data on 23 principal fibers, (2) facts on 11 leading metallic yarns, and (3) facts on 9 stretch and bulk yarns. Names and addresses of manufacturers and licensees are given. Reprints are available from America's Textile Reporter, 286 Congress Street, Boston 10, Massachusetts. Copies are 25 cents each.

Calcium alginate yarn.

S. Ilgner. *Textil-Praxis (English ed.) No. 2:* 49-53 (June, 1956).

Report on some of the characteristics, fields of application, and the treatment of alginate fibers.

Preparation and properties of fibers containing mixed polymers. Part 3. Polyacrylonitrile-silk fibers.

D. M. Cates and H. J. White, Jr. *J. Polymer Sci. 21:* 125-138 (July, 1956).

The new triacetate fibers.

A. J. Hall. *Fibres 17:* 215-220, 231 (July, 1956).

The article discusses the manufacture, structure, importance of heat treatments, processing before dyeing, dyeing and dye accelerants, fastness properties, gas fading problems, and finishing of cellulose triacetate fibers.

Arnel triacetate: properties. applications, and dyeing characteristics.

A. F. Tesi (Celanese Corp. of America). *Am. Dyestuff Reptr. 45:* P512-P517 (July 30, 1956).

The role of heat treatment is stressed, and details of dyeing and blending given. Tables. Graphs. Photographs. 3 references.

Superfine thermoplastic fibers.

V. A. Wente (U. S. Naval Research Laboratory). *Ind. Eng. Chem. 48:* 1342-1346 (August, 1956).

A process is described for producing submicron organic fibers from a variety of thermoplastic materials, including nylon, polystyrene, poly(methyl methacrylate), poly(ethylene terephthalate), and polytrifluorochloroethylene. Mats or sheets with random fiber orientation collected directly from the heated air stream used to attenuate the fibers serve as excellent filter media for fine aerosols and have potential application as liquid filters. Photographs. Diagrams. Graphs. 4 references.

YARN PRODUCTION B

A bibliographical study of literature published on fiber blends commencing with the year 1948.

Textile Society of Canada, Eastern Division. Montreal, 1956. 79 p. Available from the Textile Technical Federation of Canada, 223 Victoria Avenue, Westmount, Montreal 6, Quebec, Canada. $1.00.

More than 350 references, with abstracts, are arranged in a broad classification of aspects of fiber blends.

OPENING, PICKING, FIBER PREPARATION B 1

Modern preparation and opening methods in two-roller (condenser) spinning.

K. Muller. *Melliand Textilber. (English ed.) 37, No. 1:* 4-12 (1956).

CARDING AND COMBING B 2

Modern wool combing practice and theory: carding; Bradford and Continental systems. Part 4.

R. Walker. *Textile Mfr. 82:* 295-297, 299 (June, 1956).

The Bradford system relies upon the gradual opening or separation of the fibers from the staple formation with due care taken to preserve the fiber length; Continental carding imparts a vigorous opening treatment immediately the wool enters the machine, with consequent fiber breakage. Details of the processes are discussed and illustrated with diagrams.

The F. S. type ever-cleaner (continuous cleaning device) on carding engine.

T. Sakanoue (Fuji Spinning Co., Ltd). *J. Textile Machinery Soc. Japan 2:* 61-66 (April, 1956).

Use of the F.S. type "ever-cleaner" (a continuous-cleaning-device), designed and developed to improve quality and increase the yield of carding by preventing or reducing neps and by

keeping slivers uniform, increases yields by 0.6-1.0% and gives good results on wool and other synthetic fibers as well as cotton. Diagrams. Photographs.

Card clothing.

H. Hirt. *Melliand Textilber. 37, No. 3:* 245-247 (1956); *in German.* Through *BCIRA 36:* 335 (1956).

A simple method for determining the number of wire points per surface unit is described, and reference is made to the density of staples and the space between the longitudinal wire rows. The width of the space changes in dependence of the set repeat, the total number of spaces, and, consequently, the number of individual fibers between them. Thus, a more intensive opening may be expected in the case of narrower spaces, but a more uniform arrangement of the fiber in the web is obtained by a closer setting. The narrower space can reduce the lining of the wires by preventing the penetration of large parallel fiber bundles.

Experience with Wana rubbers.

Melliand Textilber: (English ed.) 37, No. 1: 19, 23 (1956).

The advantages of using condenser cards fitted with Wana rubbers and rubbing leathers are outlined.

The Universal card spinning machine. Part 2.

F. Müller. *Melliand Textilber. 37, No. 3:* 240-242 (1956); *in German.* Through *BCIRA 36:* 335 (1956).

Details of this new machine were given in part 1. The total construction and mechanism are now fully described and a detailed drawing is given.

Study of picking and carding reveals causes of yarn size variation.

J. M. Heavner. *Textile Ind. 120:* 108-112 (August, 1956).

Graphs and charts illustrate the effects of excessive lap weight variation from yard-to-yard and from lap-to-lap on uniformity, and the improvements effected by bringing the laps back within the allowable weight limits.

DRAWING AND ROVING B 3

Balanced production in worsted drawing.

H. A. McLean. *Wool Record 89:* 34-39 (April 19, 1956).

Factors influencing drawing sets are discussed and examples of drawing calculations are given.

The mill of today. Part 45. Fundamentals of drafting. Section 3.

R. Z. Walker. *Textile Bull. 82:* 81-85 (July, 1956).

This final section of a series which has been appearing for the last four or five years, deals briefly with the development of the spinning drafting element, outlining some of the applications of the more interesting theories of drafting control.

Fiber motion in the roller draft field.

S. Ichino, S. Kurosaki, G. Tsuchikawa and S. Kozakai. *J. Textile Machinery Soc. Japan 2:* 44-45 (April, 1956).

An experiment on the distribution of speed-changing points in the roller draft field as related to ratch, draft ratio and roller speed is discussed. 10 references.

How modern are your drawing processes?

R. D. Crowsley. *Textile World 106:* 82-84 (August, 1956).

Discussion of the latest drawing-frame elements (metallic rolls, spring weighting, sliver coilers) for getting the best sliver quality and machine efficiency at the lowest cost.

Crossbred drawing by the Raper system.

Textile Recorder 74: 72-74 (May, 1956).

A description of the first operational unit of cross bred drawing incorporating the Raper Autoleveller and a comparison with the orthodox Bradford system.

The amplitudes of periodic variations caused by eccentric top drafting rollers and their effect on yarn strength.

G. A. R. Foster and A. Tyson (Shirley Inst.). *J. Textile Inst. 47:* T385-T393 (July, 1956); *Shirley Inst. Mem. 29:* 33-41 (April, 1956).

The main object of this investigation was to measure the amplitude of the wave produced by pure eccentricity, to compare it with the amplitude derived from the theory of nip movement, and to measure its effect on yarn strength. Some measurements were also made of the effect of interaction.

The development of top rollers for drawing systems.

W. Stahlecker. *Melliand Textilber. (English ed.) 37, No. 1:* 23-24 (1956).

The development of top rollers for drawing systems is described. The influence of friction bearings and ball bearings on the spinning process is investigated and the superiority of the ball-bearing loose roller over the solid top roller is demonstrated.

Fluctuations in mass or in moisture?

J. Kanira. *Textil-Praxis (English ed.) No. 2:* 58-61 (June, 1956).

Uniformity measurements on sliver. See *TTD 13:* 228 (1956).

SPINNING, WINDING, TWISTING B 4

Theoretical determination of balloon shape and tension in continuous ring-spinning. Parts 2 and 3.

J. Detry. *Revue Textilis 12, No. 2:* 32-40; *No. 3:* 50-59 (1956); *in French.* Through *BCIRA 36:* 336 (1956).

In continuation of the first article (*TTD 13:* 229 (1956)), the author discusses the friction coefficients of the traveler and devices for their determination, the friction between thread and traveler, the resistance of air and means for measuring it, the effect of air resistance on the balloon shape (theories of Grishin, Hannah, Crank, Whitmore, and Mack), and calculation of balloon tension taking into account air resistance. Applications of the equations given are pointed out. 41 references.

Spinning machinery improvements.

VEB Spinnereimaschinenbau. *Textile Wkly. 56:* 1844 (June 29, 1956).

A new type of swivel arm is described, requiring no extra pendulum adjustment of the upper pressure rolls while retaining the advantages of the previously used types with spring pendulum arms.

The use of the ring spinning frame in vigogne and condenser spinning.

W. Frotscher. *Melliand Textilber. (English ed.) 37, No. 1:* 12-19 (1956).

See *TTD 13:* 293 (1956).

Theory and measurements of the lashing-end radius of doubled yarns.

C. Mack and E. J. L. Smart (Shirley Inst.). *J. Textile Inst. 47:* T394-T401 (July, 1956); *Shirley Inst. Mem. 29:* 43-50 (April, 1956).

Given the yarn count and diameter, and the bobbin diameter and angular velocity, the lashing-end radius can be found from a single curve. Air-drag is shown to be a major factor in determining the size of the lashing-end radius and the paper includes some measurements of the air-drag of doubled yarns. A curve which enables the air-drag of doubled yarns to be computed from their observed diameters is also given. 5 references.

Innovations in constructing machines for manufacturing fancy yarns.

W. Paul. *Textil-Praxis (English ed.) No. 2:* 62-65 (June, 1956).

The new Berliner Textilmaschinen GmbH fancy doubling frames incorporate photoelectrically controlled delivery motions which are connected to the drive motion by means of electromagnetic couplings. A diagram of the mechanism and a pattern card used to record the machine setting are shown.

An analysis of vacuum scavenger system waste from spinning frames.

F. G. Ernest. *Textile Ind. 120:* 89-92 (August, 1956).

An analysis of the amount and types of waste chargeable to vacuum scavenger systems was made to determine: (1) how much is produced: (2) the effect of yarn count, twist, length of draft, and type of stock; (3) the appearance and characteristics of this waste; and (4) if it is suitable for reworking.

Prevention of ribbon formation and of hard edges in cheeses.

P. I. M. van Gorp. *Tex 15, No. 4:* 488-491 (1956); *in Dutch.* Through *BCIRA 36:* 361 (1956).

Four methods for avoiding these faults on cheeses are described: (1) by using a split drum with large diameter, (2) by periodical displacement of the bobbin point on which the yarn is wound. (3) by changing the number of revolutions of the cheeses, and (4) by differential winding.

How to get the most from spinning builder motions. Part 1. Straight warp wind. Part 2. Straight filling wind. Part 3. Combination warp-filling wind.

M. Chagro. *Textile Ind. 120:* 186-187, 265-267 (June, 1956); 88-89 (July, 1956); 124-125 (August, 1956).

Controlled balloon spinning. Part 3.

Globe Rev. 1, No. 4: 133-135 (1956).

Savings in winding costs through large packages.

How to increase efficiency in the Barber-Colman spooling process.

R. B. Mitchell (Barnes Textile Associates, Inc.). *Textile Age 20:* 20-30 (July, 1956).

Methods-Time Measurement studies were conducted of each work element involved in tending the spooler and a new method evolved yielding 5.5% more production per operator.

Processing fine denier synthetics: new rewinding machine for up-twister bobbins.

M. Ratti S.p.A. *Textile Merc. 135:* 60-61 (July 13, 1956); *Textile Wkly. 56:* 26-27 (July 6, 1956).

The Autocopser A-S-E.

H. Eigenbertz. *Melliand Textilber. (English ed.) 37, No. 1:* 24-36 (1956).

See *TTD 13:* 231 (1956).

A cross-winder rapid-coner.

Schweiter Ltd. *Textile Wkly. 56:* 1795, 1798 (June 22, 1956).

Special features of the KS type cross-winder which can wind soft-twisted cotton yarn at 1,100 yards per minute are described.

Pineapple conewinding.

Scharer Textile Machine Works. *Textile Wkly. 56:* 1865-1866 (June 29, 1956).

Technical details of machine designed for winding silk, nylon, Perlon, Orlon, Terylene, down to the finest deniers.

Slub yarn manufacturing and its characteristics.

T. Yamagishi, E. Koyama and H. Kuroe (Kurashiki Cotton Spinning Co., Ltd). *J. Textile Machinery Soc. Japan 2:* 27-31 (April, 1956).

This article deals with slub yarn which is manufactured on a spinning frame having a mechanism to speed up or slow down its roll speed from time to time. The effect of roll speed changes on drafting is discussed theoretically. The correlation among such factors as the size and length of slub portion, the staple fiber length of fed sliver, and the duration of speed-change in the roller, as well as various characteristics of the slub portion such as the distribution of twist, quantitative distribution, strength and elongation are experimentally computed.

How to check warp yarn for short-term twist variation.

J. Allan. *Textile World 106:* 114-115, 194 (August, 1956).

Method of testing for faulty spindles causing a loss of twist in yarn when the spinning frame stops and starts, and pointers on handling yarn defects that cause bad packages.

YARNS B 5

15 checks to inspect purchased yarn.

P. Wierks (Leach Textiles Ltd). *Textile World 106:* 100 (July, 1956).

Pointers for systematic inspection that covers cone appearance, the yarn itself, and the processing qualities of the yarn.

The current story of stretch yarns.

E. Stowell (Universal Winding Co.). *Textile Ind. 120:* 92-93, 212 (August, 1956).

The stretch and bulk characteristics of various continuous yarns are discussed with comments on their present commercial and research status.

Viscose rayon in the tire industry.

E. C. Mercier. *Can. Textile J. 73:* 54-56 (June 15, 1956); 59-60 (June 29, 1956).

The construction and component parts of tires are explained and the processing of rayon tire yarn and the physical properties of tire cord discussed.

The effect of twist on the static modulus of cotton hawser-twist cord.

J. D. Tallant and J. J. Brown (Southern Regional Research Laboratory). *Textile Research J. 26:* 523-524 (July, 1956).

This report presents the results of an empirical approach to delineate the relative effects of twist upon the modulus of cotton hawser-twist cord of a single construction. The analysis was made on the data obtained on a series of 54 cords of 16's/4/3 construction with ZZS twist. The moduli for the different cords appeared to be inversely correlated with twist regardless of whether the twist was in the singles, ply, or cord. Increasing the twist 1 t.p.i. in the components of this series of cords appeared to lower the modulus approximately 1 g./grex/t.p.i. if in either the singles or ply, and 1.5 g./grex/t.p.i. if in the cord.

Studies on twisted yarns.

T. Manabe (Nippon Rayon Co., Ltd). *J. Textile Machinery Soc. Japan 2:* 10-19 (April, 1956).

From studies on the movement of position, in space, of a fiber in the process of single and plied yarn twisting, a theory of twist structure has been developed. On the basis of this theory, theories of twist shrinkage, breaking strength, twist movement, and stiffness in twisting of twisted yarns are developed. Experiments have been made with rayon tire yarns and rayon tire cords, and the results, theoretical and experimental, agree fairly well. 11 references.

The snarling of worsted yarns. Parts 1, 2, and 3.

P. P. Townend and A. C. Hird. *Textile Recorder 74:* 53-54 (May, 1956); 59-61 (June, 1956); 49-52 (August, 1956).

An investigation into the snarling properties of twofold yarns containing varying degrees of balanced and unbalanced twist and taking into consideration the effects of storage time and humidity.

Variance-length relations in a yarn with restricted variation in fiber position.

M. Hannah and S. Rodden (Leeds Univ.). *J. Textile Inst. 47:* T402-T412 (July, 1956).

The serial correlation and the variance-length functions have been obtained for an idealized yarn or sliver where each fiber is restricted in position to be within a fixed axial length. 8 references.

FABRIC PRODUCTION C

WARPING, SLASHING, YARN PREPARATION C 1

Modern enzymatic desizing processes.

V. Windbichler. *Melliand Textilber. (English ed.). 37, No. 1:* 61-70 (1956).

This review covers the development of the enzymatic desizing method, the chemical process on which it is based, and a description of the various methods of continuous desizing in use today.

Warp sizing. Part 3. Material to be sized—rayons.

P. V. Seydel (Seydel-Woolley and Co.). *Textile Ind. 120:* 102-111 (July, 1956).

The article discusses production of viscose and cuprammonium yarns; physical properties of rayon; effect of moisture; chemical composition and properties; and yarn construction.

Warp sizing. Part 4. Materials for sizing.

P. V. Seydel (Seydel-Woolley and Co.). *Textile Ind. 120:* 126-137 (August, 1956).

Information on adhesives or binders, lubricants and softeners, deliquescents, antiseptics, weighting materials, water, penetrants, antifoaming agents, tints and dyes, starch thinners, and film modifiers.

Optimum sizing temperature of cotton warps.

P. A. Islent'ev. *Tekstil. Prom. 16, No. 1:* 38-40 (1956); *in Russian.* Through *BCIRA 36:* 246 (1956).

Experimental results indicate that the optimum temperature of the size is 60° ± 2°C (80°C in the size-boiling vat). When using modified starch acidified with hypochlorite, a temperature of 80-85°C is sufficient for preparing the size. This results in a saving of 40 kg steam.

Comparison of multiple- and single-path air-drying sizing machines.

M. Flück. *Melliand Textilber. 37, No. 3:* 250-253 (1956); *in German.* Through *BCIRA 36:* 336 (1956).

Sizing problems are discussed in general, and comparison is made between the efficiency of two Rüti machines, the air-drying sizing machine LSMV and the LSMA-type provided with the Artos plane drier.

Method for pre-calculating the yarn-lengths of warping cops.

J. Ernestus. *Textil-Praxis (English ed.) No. 2:* 68-72 (June, 1956).

WEAVING C 2

Tube cleaning machine.

F. Walz. *Textil-Praxis 11, No. 4:* 351-355 (1956); *in German.* Through *BCIRA 36:* 361 (1956).

The mechanism and construction of modern cleaning machines for tubes used on automatic looms are described and illustrated, in particular, the Terrell tube-cleaning machine, and the clearing machines of W. Stutz & Cie and of Jos. Timmer. Reference is also made to various tube forms and to general characteristics of tube-removing machines.

The frequency of repairs to jacquard machines.

J. Schneider. *Reyon Zellwolle Chemiefasern No. 4:* 248-260 (April, 1956); *in German.* Through *BCIRA 36:* 362 (1956).

With reference to a previous article by H. Griese (see *TTD 11:* 373 (1954)), in which the high frequency of repairs to jacquard machines was shown statistically, the author discusses in detail wear phenomena on various parts of the machine (on driving elements, wear phenomena due to the formation of the clear shed, on knives, etc.) necessitating frequent repairs. Recommendations are also given for reducing these phenomena.

A new warp let-off motion.

J. Weiner. *Melliand Textilber. (English ed.) 37, No. 1:* 46-48 (1956).

See *TTD 13:* 297 (1956).

A study in loom fixing. Part 8.

F. D. Herring. *Textile Bull. 82:* 85-88 (July, 1956).

A checklist for excessive wear on the shuttle.

New revolving skip box motion with card saving mechanism.

M. Kohler. *Melliand Textilber. 37, No. 3:* 254-256 (1956); *in German.* Through *BCIRA 36:* 337 (1956).

The new motion (produced by the Lignostone Holzveredlungs GmbH) can be fixed to

any overpick loom. The card-saving mechanism with two dobby cards can also be used on its own on the usual skip box loom. Constructional details and advantages are described.

Double box looms for dobby and jacquard weaving.

H. Maier. *Melliand Textilber. (English ed.) 37, No. 1:* 36, 39-42 (1956).

The outstanding features of the double box loom model Huhle (Berliner Textilmaschinen GmbH) are described. The loom can be fitted with dobbies and jacquard machines of all types and can also be fitted to operate as a plain loom or with a box motion at one side only. Photographs. Diagrams.

Eliminate the guesswork from battery maintenance.

W. C. Westbrook. *Textile World 106:* 106-107 (June, 1956).

The checking and setting of the parts and motions of the filling-changing mechanism of a loom is briefly outlined.

Loom construction and setting problems. Part 2.

H. Barlow. *Textile Recorder 74:* 51-53 (July, 1956).

Some further features of loom lay construction, the mounting and fitting out of lays as well as testing and repairing procedures are described.

Sakamoto's SM type high-speed cop change automatic weaving machine.

J. Textile Machinery Soc. Japan 2: 69-70 (April, 1956).

Mechanical features are described.

Keep lugs high for top loom performance.

W. C. Westbrook. *Textile World 106:* 94-95, 170-172 (July, 1956).

Pressure-roll cover improves weaving at Shelby.

R. B. Pressley. *Textile World 106:* 98-99, 186-188 (July, 1956).

A cover of sponged-rubber-and-cork material cut costs and improved weaving.

A new British low-built silk and rayon loom.

D. Brunnschweiler. *Skinner's Silk & Rayon Record 30:* 678-680 (July, 1956).

The special features of the new loom built by George Hattersley and Sons Ltd. are described and illustrated. The basis of the new looms is their frame, low mounted dobby, and heddle shaft undermotion. It is to the very low center of gravity of these parts that the higher loom speeds can be attributed, loom vibration being much lower than previously.

A new thread cutter for automatic looms.

Drahtex GmbH. *Textil-Praxis (English ed.) No. 1:* 22-23 (March, 1956).

Henry J. Cooper automatic weaving machine.

H. Lanigan. *Textile Wkly. 56:* 28-30, 58 (July 6, 1956).

This preliminary assessment of the Cotron weaving machine includes a description of its outstanding features, potentialities, and cost. The machine is designed on lines more related to knitting mechanisms than to conventional weaving and weaves a 90-94 inch wide fabric or splits of this width, all splits having selvages on each edge.

Investigations into the change in stroke strength during picking by displacing the picking bowl on the picking shaft.

G. Schallebaum. *Textil-Praxis 11, No. 4:* 373-375 (1956); *in German.* Through *BCIRA 36:* 362 (1956).

The adiustment of picking is discussed theoretically, taking into account the velocity with which the shuttle leaves the picker, and the change in the path of the picking bowl on displacing it upwardly (over pick) or to the left (under pick).

An analysis of under picking motions of power looms.

H. Kamogawa (Shizuoka University). *J. Textile Machinery Soc. Japan 2:* 46-49 (April, 1956).

This analysis, obtained by replacing both the stick and the side lever with an equivalent spring and an equivalent mass in the under picking mechanism, agrees with experimental results more accurately than do conventional theories.

New three-position dobby for the plush and velvet trade.

H. Osswald. *Melliand Textilber. (English ed.) 37, No. 1:* 42-46 (1956).

A brief comparison of the essential features of the different dobby systems, e.g., the Hodgson dobby, the Knowles dobby, and the Hattersley dobby, precedes a description of the features of the new three-position dobby supplied by Felix Tonnar GmbH, Dulken. Diagrams. Photograph.

The manufacture of velvet and plush.

W. T. Swatek. *Melliand Textilber. 37, No. 3:* 258-261; *No. 4:* 392-397 (1956); *in German.*

How the Roberts Anniston selvage is made.

Textile Ind. 120: 100-103 (August, 1956).

Mechanical details and operation of Roberts Anniston selvage loop retainer. Photographs. Diagrams.

Methods of checking the shuttle.

J. Starkie. *Textile Mfr. 82:* 285-288 (June, 1956).

Checking arrangements on overpick and underpick looms and single and multiple box looms as well as details and operation of the center weft fork and braking methods are covered.

Type of weft stop motion for wide automatic looms.

N. V. Lipshits. *Tekstil. Prom. 15, No. 9:* 18-21 (1955); *in Russian.* Through *BCIRA 36:* 118 (1956).

The replacement of lateral by central weft stop motions is recommended; in conjunction with the loom brake, they ensure instantaneous standstill of the lay. On looms with a weft width greater than 1500 mm the use of a double weft stop motion is of advantage. The construction of central weft stop motions is described.

A new circular weaving process.

W. Nicolet. *Melliand Textilber. 37, No. 3:* 257-258 (1956); *in German.* Through *BCIRA 36:* 336 (1956).

A shuttleless circular weaving process is described, in which the weft is inserted simultaneously at different points from bobbins mounted outside the warp. A new fabric structure is produced, which is particularly suitable for technical purposes on account of the great strength of the material. A patent application has been made both for the weaving process and fabric.

KNITTING C 3

Control sock sizes to do a better job for less cost.

W. A. Dutton (Hosiery and Allied Trades Research Assoc.). *Textile World 106:* 125, 188-190 (July, 1956).

The causes and methods of preventing dimensional variations in hosiery are discussed.

The position of the yarns in warp-knit tricots.

E. Heukers and P. C. van Hoek. *Enka Breda Rayon Rev. 10:* 98-105 (June, 1956).

Explanation of how yarns come to lie in a variety of designs and how that position can be influenced. Microphotographs.

Circular flat knitting machine diamond FR.

A. Haux. *Melliand Textilber. (English ed.) 37, No. 1:* 48-50 (1956).

The special constructional innovations of the machine are described briefly.

Productions of fancy rib-trimmings: the Servo-stop jacquard strapping machine.

J. Rab. *Hosiery Times 29:* 12-14 (July, 1956).

The Servo-stop jacquard strapping machine, Model M.J., built in a needle width of 7½ inches, and in gauges of 7 to 16 needles per inch, is a single-system machine, built as an enclosed integral unit and driven from a built-in motor via a simple direct drive. A yarn-stand is provided at the side of the machine with room for 3 individual yarn packages, working in conjunction with 3 available yarn guides. A unique constructional detail is the use of round bars for mounting the cam carriage and yarn carriers. Photographs.

A new needle for warp knitting.

J. B. Lancashire. *Hosiery Trade J. 63:* 64-65 (July, 1956).

A new compound needle comprising a moveable hook member and a fixed cover element, manufactured by Hooknit Ltd., is claimed to attain higher speeds than bearded or latch needles due to shorter knitting movements and smoother loop-forming actions.

Quality control methods and aids in knitgoods production.

J. Rab. *Hosiery Trade J. 63:* 74-76, 80 (July, 1956).

The factors contributing to garment length variation, e.g. yarn faults and mechanical considerations, are discussed and control methods and instruments described.

FABRICS C 4

Wearing trials with men's underwear consisting of 100% cotton and of ⅔ cotton with ⅓ rayon staple.

A. Visser. *Enka Breda Rayon Rev. 10:* 113-120 (June, 1956).

The life of men's underwear was found to be prolonged by the blending of one third of Fibrenka with two-thirds of cotton. Other properties, such as dimensional stability, etc., are not adversely affected by the addition of the Fibrenka. 4 references.

What every customer should know about fabrics.

Am. Fabrics No. 37: 51-62 (Summer, 1956).

Basic facts for consumers on care and performance of wool, cotton, silk, and synthetic fibers are presented, together with a chart of the most

important man-made fibers and their manufacturers, and a reprint of Cleaning Laundry World's fiber identification chart of general service characteristics of all fibers commonly found in fabrics today.

A study of wash and wear cottons.

C. R. Williams (Monsanto Chemical Co.). *Am. Dyestuff Reptr. 45:* P472-P478 (July, 1956).

A representative sampling of commercial cotton fabrics was analyzed for a large number of physical properties, and given a subjective wash and wear ranking. No physical property was found that correlated with the ranking as such, but when the printed fabrics of extreme pattern and color were removed from the group, a significant linear relationship with wrinkle recovery was evident. A direct relationship between wet and dry wrinkle recovery was found. A series of experiments established that wrinkle recovery alone was the mechanism by which a resin improved wash and wear, and that resinification was detrimental, thus indicating the dimethylol cyclic ethylene urea type, by virtue of its greater wrinkle recovery effect and lack of resinification, to be the best resin. Common additives have little or no beneficial effect and should be included only for their influence on other properties.

Stop quality defects at their source.

M. C. Gross. *Textile World 106:* 120-121 (August, 1956).

The prevention of cloth defects caused by faulty drawing and spinning is discussed.

Woven fabric construction: ⅓ twill as a basis for spot designs.

D. C. Snowden. *Man-Made Textiles 33:* 42-43 (July, 1956).

Application of cloth geometry in textile designing.

D. Haldar. *Indian Textile J. 66:* 468-474, 500 (May, 1956).

The application of Peirce's theory of cloth structure to the functional designing of textiles is presented, following a brief review of various cloth structure theories. 20 references.

Two new trouble-shooting fabrics.

K. Werline. *DuPont Mag. 50:* 12-13 (June-July, 1956).

A semi-technical report on fabrics coated with Lecton acrylic resin especially suited for electrical insulation uses, and Armalon tetrafluoroethylene felt and impregnated felt for severe filtering and gasketing applications.

Compound cloth.

J. Schmachtel. *Melliand Textilber. 36, No. 1:* 33-35 (1955); *37, No. 3:* 266-269 (1956); *in German.*

Textile fabrics and their selection.

I. B. Wingate. Prentice-Hall, Inc., Englewood Cliffs, N. J., 1955. 703 p. $8.65.

This book discusses pertinent facts that will guide the customer in making the best fabric selection; it interprets the terms found on tags and labels affixed to textile fabrics; and it emphasizes the selling points for textile fabrics that will enable a retail salesman to give more intelligent answers.

Quick way to check tricot yield.

J. H. Blore. *Textile World 106:* 93, 176 (August, 1956).

The method described uses a Lunometer (plastic vernier stitch counter) and a chart based on the weight of yarn in 1 square yard of fabric.

Chemical heat-welding action is basis of "spinning and weaving" processes.

E. Bobkowicz. *Textile Ind. 120:* 123, 126 (July, 1956); *Cotton Trade J. International Yearbook:* 30-32, 251-252 (1955-1956).

High-speed process for producing nonwoven semi-plastic, heat-welded textile fabrics from semi-plastic yarns.

Nonwoven fabrics: a new textile material.

C. E. Coke (Courtaulds (Canada) Ltd). *Can. Textile J. 73:* 51-55 (June 29, 1956).

A summary of the history of the industry, manufacture, physical properties (in table form) and end-uses of nonwoven fabrics. 11 references.

Observations made in wearing and washing fabrics of synthetic fibers.

O. Viertel. *Textil-Praxis (English ed.) No. 2:* 83-86 (June, 1956).

Serviceability tests on Perlon hosiery, underwear and shirts are reported, together with a brief description of sulfuric acid viscosity tests for studying differences in Perlon structure.

The behavior of certain cotton and linen fabrics with respect to the absorption of water and drying.

F. E. Petzel. *Am. Dyestuff Reptr. 45:* 399-404 (June 18, 1956).

A study was made of the differences in the absorption of water by and the drying of desized, plain-weave crash dish towelings composed of cotton, flax and mixtures of 25% flax and 75% cotton. The weight of water absorbed by desized linen towelings was markedly less than that ab-

sorbed by towelings made from cotton or from mixtures of 75% cotton and 25% flax. Differences in absorption by towelings composed of cotton as compared with mixtures of cotton and flax were not significant. Desized linen towelings contained the smallest amount of water after drying for 10 minutes. There was a close relationship among the grams of water per specimen after drying for 10 minutes, the length of the constant-rate period, and the length of the total drying period. 26 references.

Factors influencing the water-imbibition of fabrics intended for use as glass cloths.

C. M. Dorkin and N. H. Chamberlain (Leeds Univ.). *J. Textile Inst. 47:* T371-T384 (July, 1956).

The work described originated from a commercial observation that glass cloths and tea towels made from spun rayon absorbed less water in use, and consequently required drying at more frequent intervals than cotton and linen ones. An effort was made to find the reason for this apparently anomalous behavior, by determining the factors influencing the uptake of water by fabrics of this type, and, if possible, correcting the existing defect. 4 references.

FINISHING AND CHEMICAL PROCESSING D

Dyeing and finishing of knitted goods composed of polyamide fibers.

C. Klopfstock and G. Zeidler. *Melliand Textilber. (English ed.) 37. No. 1:* 82-86 (1956).

A general review of precleaning, heat setting, bleaching, and dyeing, including the application of Hydron Blue and Indocarbon in addition to the more popular classes of dyestuffs. 4 references.

Dyeing and finishing of Perlon stockings.

W. Bernard. *Melliand Textilber. (English ed.) 37, No. 1:* 70-74 (1956).

The most important methods and products for finishing and dyeing polyamide hose are outlined.

The dyeing and related processing of Nylenka.

R. M. Stribling (American Enka Corp.). *Am. Dyestuff Reptr. 45:* P452-P455 (July 2, 1956).

The manufacture, characteristics and properties of Nylenka (nylon 6) are described and the details of processing blends with viscose staple, Nylenka carpets, full-fashioned hose, and stretch socks are given.

pH control in wool processing. Parts 1 and 2.

Textile Recorder 74: 59-60 (July, 1956); 52-53 (August, 1956).

The effect of pH on carbonizing, crabbing, bleaching, felting, and shrinkproofing.

Scouring and dyeing Fibrolane for the carpet trade.

R. C. Cheetham (Courtaulds Ltd). *Dyer 115:* 1043-1047 (June 22, 1956).

Techniques for staple, blended yarn, and piece goods.

CHEMICAL PROCESSES D 1

Peroxide bleaching of cotton and linen fabrics.

M. I. Gershov, V. M. Ampleev and A. P. Kobelev. *Tekstil. Prom. 15, No. 10:* 42-43 (1955); *in Russian.* Through *BCIRA 36:* 154 (1956).

In order to improve the whiteness of fabrics and reduce consumption of hydrogen peroxide, an attempt was made to carry out the bleaching process in boilers under pressure. The method was found very effective, reducing the consumption of hydrogen peroxide by about 40% compared with bleaching in open tanks under otherwise identical conditions. Further experiments showed that pretreatment of the fabric with hydrogen peroxide solution is not necessary; it is sufficient to saturate it with the wetting agent and to increase the pressure in the boiler to 2.7 atm. The bleached fabric shows excellent whiteness, and improved physico-chemical properties and viscosity of the cuprammonium solution, as compared with the classical bleaching method.

Hypochlorite-peroxide bleaching of sewing cotton.

A. V. Surovaya. *Tekstil. Prom. 15, No. 11:* 34-38 (1955); *in Russian.* Through *BCIRA 36:* 188 (1956).

The method of bleaching sewing cotton, carried out on a laboratory scale and under plant conditions, comprises: impregnating the hanks with a sodium hypochlorite solution, containing 1.5-2.0 g/1. active chlorine, 0.7-1.0 g/1. sodium hydroxide, and 1 g/1. wetting agent, at 20-25°C, and subsequent squeezing; steeping (after 1 hour) in hydrogen peroxide solution and boiling for 5 hours; rinsing in hot and cold water and squeezing.

The new bleaching techniques.

A. J. Hall. *Textile Merc. 135:* 62-67 (July 13, 1956).

The author discusses developments to simplify and improve the bleaching of various types of

fibers.

Atomizing apparatus for textiles.

Textile Recorder 75: 68-70 (August, 1956).

Features of the Brumex atomizing apparatus for moistening or conditioning of textiles, application of finishing solutions, and also for such purposes as the fugitive dyeing of staple fibers.

New quaternary germicide.

W. E. Botwright, A. B. Law, W. D. Niederhauser and J. L. Rainey (Rohm & Haas Co.). *Soap Chem. Specialties 32:* 207-213 (May, 1956).

The chemical, physical and antimicrobial properties of Quaternary 3104, recommended as a fabric antiseptic, are given.

Cyanoethylation of cotton fabric.

L. H. Greathouse, H. J. Janssen, W. N. Berard, and C. H. Haydel (Southern Regional Research Laboratory). *Ind. Eng. Chem. 48:* 1263-1267 (August, 1956).

A pilot plant study was undertaken to investigate nonuniformity in production of cyanoethylated cloth. By careful control of reaction conditions, especially temperature, 45-yard lengths of standard print cloth were cyanoethylated within limits of 0.40 to 0.42 cyanoethyl addition per anhydroglucose unit. This evenness of modification existed even between single yarns and fibers and along the length of individual fibers. The uniformity attained was within the limits of differentiation by any standard test. 16 references.

Partially acetylated cotton fiber and treatments to facilitate processing into yarn.

W. G. Sloan, E. M. Buras, Jr., C. F. Goldthwait and A. L. Murphy. (Southern Regional Research Laboratory). *Am. Dyestuff Reptr. 45:* 429-433 (July 2, 1956).

A study was made of partially acetylated cotton stock and treatments applied to facilitate processing into yarn. Changes in physical properties of the fiber upon acetylation are discussed and difficulties encountered in mechanical processing are described. The investigation of possible methods of overcoming these difficulties, both by the application of antistatic finishes and by spinning blends of small amounts of raw cotton with acetylated cotton, is described. Data are given on strength and heat endurance of yarns spun from small lots of acetylated stock and the results of both the antistatic treatment and the blending upon these properties are shown.

The use of acrylate resins in crease-resistant finishes.

R. Steele and C. L. Browne (Rohm & Haas Co.). *Am. Dyestuff Reptr. 45:* 525-528 (July 30, 1956).

Significant improvements in crease recovery are obtained by application of soft acrylate resin dispersions. This effect is additive to that produced by thermosetting resins and can be obtained with relatively small amounts of resin. A considerable gain in the tear resistance of the fabric also results. Graphs. 7 references.

Separation of formaldehyde during ironing of crease-proofed fabrics.

W. Himmelreich. *Textil- u. Faserstofftech. 6, No. 2:* 84-86 (1956): *in German.* Through *BCIRA 36:* 259 (1956).

The quality requirements for granting the Sylona-certificate to creaseproofed fabrics specify, among others, the permissible amount of total formaldehyde (based on the cloth weight) as 3.5%. It was found that the total formaldehyde shows no relation to the free formaldehyde occurring during ironing. A suitable method for determining the free formaldehyde is described: the permissible amount determined by this method is limited to 0.8%.

Creaseproofing of spun rayon fabrics.

E. Pieper. *Reyon Zellwolle Chemiefasern No. 4:* 269-277 (April, 1956): *in German.* Through *BCIRA 36:* 367 (1956).

A review. 45 references.

Care-free fabrics and garments.

B. C. M. Dorset. *Textile Mfr. 82:* 310-312 (June, 1956).

The theoretical basis of creaseproofing and shrinkproofing finishes is considered and the methods of achieving such finishes discussed, e.g. resin filling, cross-linking and heat setting.

Relations between the change of color and the degree of degradation of cotton cloth in carbonizing.

A. Ikeda, H. Sanuki and T. Iwakata (Tokyo University of Agriculture and Technology). *J. Textile Machinery Soc. Japan 2:* 39-44 (April, 1956).

The process of degradation which is due to depolymerization caused by hydrolysis is shown to be an important factor contributing to the reaction of the initial stage in the carbonizing mechanism. The difference in the state and location of the cloth during heating changes the effects of treatment. It is concluded that it is incorrect to judge the degree of degradation by the change of color in the carbonizing process, because the change of color is due in very large measure to esterification. 8 references.

Tendering in scouring and bleaching cotton piece goods.

Textile Mfr. 82: 313-315 (June, 1956).

Methods of reducing tendering in scouring and bleaching cellulosic fibers, due to the formation of oxycellulose by excessive oxidation and the formation of hydrocellulose in the presence of excess mineral acid, are suggested.

Difficulties involved in Schreiner finishing and their causes.

R. Allscher. *Melliand Textilber. (English ed.) 37, No. 1:* 76-80 (1956).

The importance of mechanical factors and the nature of the finishing agents, in particular the synthetic resin employed, on the effect of handle, luster, durability of finish, tensile strength, abrasion resistance and water spotting of Schreiner finished fabrics are stressed.

Cotton finishing.

H. C. Borghetty (Rohm & Haas Co.). *Am. Dyestuff Reptr. 45:* P518-P523 (July 30, 1956).

Nondurable finishes based upon starch, sulfonated oils, and waxes, and durable finishing techniques, particularly in regard to resins of the thermosetting and thermoplastic types, are discussed mainly from the point of view of the effects obtained.

Chemical considerations of woolen and worsted finishing.

H. C. Haller (Bernhard Altman International Corp.). *Am. Dyestuff Reptr. 45:* P484-P490 (July 16, 1956).

A survey of the methods for imparting shrink-, moth-, shower-, and crease resistance to woolens, as well as the various classes of softening agents available and their present usage. 16 references.

Fluorine and iodine compounds as flame retardants for cotton.

J. G. Frick, Jr., J. D. Reid, and H. B. Moore (Southern Regional Research Laboratory). *Textile Research J. 26:* 525-528 (July, 1956).

Fluorine and iodine compounds, both organic and inorganic, were tested as flame retardants for cotton. Comparison with bromine and chlorine compounds showed that the effectiveness of the halogens, on an equal weight basis, increases in the order: fluorine, chlorine, bromine, iodine, with the last two about equally effective. 8 references.

Modern plastics in cotton finishing.

B. Uppenkamp. *Melliand Textilber. (English ed.) 37, No. 1:* 88-90 (1956).

A review of the potential applications of thermoplastic and thermosetting resins in cotton finishing.

Modern scouring machines for finishing of woolen fabrics.

J. Wieser. *Textil-Praxis (English ed.) No. 1:* 36-40 (March, 1956).

Open-width scourer and combined rope scourer with milling arrangements developed by L. Ph. Hemmer GmbH are described.

The Krumpex process.

G. Memminger. *Melliand Textilber. (English ed.) 37, No. 1:* 94-98 (1956).

A new steam technique for the production of shrink-resist knitgoods is described. Diagram. Photograph.

Silicones and their use in textile finishing. Part 2.

W. Weltzien and G. Hauschild. *Melliand Textilber. 37, No. 3:* 316-320; *No. 4:* 449-452 (1956); *in German.* Through *BCIRA 36:* 340 (1956).

The authors discuss the chemistry of silicone impregnating agents, the chemical composition of the uncondensed silicone, chemical processes taking place during condensation, condensation acceleration by oxygen and unsaturated compounds, and hardening of the silicone by unsaturated compounds. Examination of the volatile silicon-containing reaction products, liberated during and after condensation, indicates that they are decomposition products forming at high condensation temperatures, to which the silicone losses occurring during the reaction may be attributed. For part 1 see *TTD 13:* 307 (1956).

The full-width washing machine.

E. Kusters. *Melliand Textilber. (English ed.) 37, No. 1:* 52-61 (1956).

Lecture on the development work carried out in the last two years on a new full-width washing machine. Included in the investigation were studies on the washing effects of squeezing, liquor motion, ultrasonic vibrations, shaking motion, rate of liquor flow, dynamic pressure and impact compression.

Waterproofing and water-repellent impregnations.

G. Dürig. *SVF Fachorgan Textilveredlung 11, No. 4:* 159-175 (1956); *in German.* Through *BCIRA 36:* 368 (1956).

A brief historical review is made and the water-repellent agents used at present are classified and critically examined, and causes of defects in the impregnation (dirt, calcium soap, textile as-

sistants, and acid residues) pointed out. Methods for testing the water-repellency of impregnated fabrics are discussed in detail.

DYEING AND PRINTING D 2

Re-dyeing rags and waste.

Dyer 115: 415-417 (March 16, 1956); 493-495 (March 30, 1956); 579-580 (April 13, 1956); 661-662 (April 27, 1956); 1011-1012 (June 22, 1956).

The dyeing of carbonized woolens, uncarbonized linseys, wool-acetate, wool-viscose, jute rags and clippings, cotton and viscose rayon, and the handling of waste stock are discussed.

Sir William Henry Perkin.

Ciba Rev. No. 115: 2-49 (June, 1956).

The life and work of Sir William Henry Perkin (1838-1907), discoverer of the first coal-tar dye, are discussed in a series of articles. Photographs. Diagrams. 34 references.

Technology of disperse dyes. Part 3. High temperature dyeing.

A. Datyner. *Man-Made Textiles 33:* 68-70 (July, 1956).

High temperature dyeing is suggested as an alternate to the use of carriers in the case of disperse dyestuffs. The effect of temperature on dyeing, factors in the choice of maximum temperature (dye exhaustion, stability of the dyestuffs and fibers, and machine design), and complications due to difficulties encountered in sampling are covered.

The dyeing of Orlon and Orlon mixtures.

I. M. S. Walls (Imperial Chemical Industries Ltd.). *J. Soc. Dyers Colourists 72:* 261-268 (June, 1956).

The physical characteristics of the acrylic fiber Orlon are described briefly. Disperse dyes, basic dyes, and acid dyes applied by the cuprous ion technique, and indigoid and thioindigoid vat dyes can be used to dye this fiber, and the dyeings and fastness properties of each class of dye are described fully. The selection of dyes for specific purposes is discussed, and some advice on practical dyeing and finishing procedure included. The dyeing of mixtures of Orlon with wool, nylon, and cellulosic fibers is described, and the paper concludes with some comments on the dyeing properties of analogous European acrylic fibers. 8 references.

The application of vat dyes to Acrilan and to Acrilan-rayon blends.

E. D. Smith and W. H. Hindle. *Am. Dyestuff Reptr. 45:* P413-P415 (June 18, 1956).

A progress report of some laboratory work on the application of vat dyes to 100% Acrilan and to Acrilan-rayon blends. The dyeing of 100% Acrilan appears to be well in hand, and some very promising results have been obtained on the rayon blends.

Piece-dyeing and finishing of polyacrylonitrile fabrics. Part 4.

J. Müller. *Melliand Textilber. 37, No. 3:* 309-313; *No. 4:* 436-440 (1956); *in German.* Summary in *BCIRA 36:* 339 (1956).

New findings and experiences during dyeing of blends from man-made and other fibers.

A. Wurz. *Melliand Textilber. 37, No. 3:* 301-306 (1956); *in German.* Through *BCIRA 36:* 340 (1956).

A review of the dyeing properties of blends from (a) polyamide fibers and wool, silk, or cellulose fibers, (b) polyacrylonitrile fibers and wool, polyamide, or cellulose fibers, and (c) polyester fibers and wool, polyamide, cellulose, or polyacrylonitrile fibers. 19 references.

Studies of the dyeing of nylon with acid dyes. Part 2. Kinetics of the process.

E. Atherton and R. H. Peters (Imperial Chemical Industries, Ltd). *Textile Research J. 26:* 497-517 (July, 1956).

The rate of uptake by nylon of 9 acid dyes and 21 binary mixtures thereof have been determined at pH 3 and 75°C. using infinite dye bath conditions in an attempt to rationalize the dyeing of nylon when two dyes are applied simultaneously. The results have been analyzed by a modified diffusion equation in which the flux of dye is assumed proportional to the gradient of activity of the dye on the fiber. This equation leads to the result that the uptake of dye 1 is proportional to that of dye 2, a fact which is confirmed by the experimental data. The slope of a graph of the uptake of dye 1 versus dye 2 is related to the ratio of the diffusion coefficients, the affinities of the dyes for the fiber, and the concentrations of the dyes in the bath. Using diffusion coefficients deduced from the rate of uptake of the dyes taken singly, the affinity difference of each binary pair has been calculated. The results obtained are discussed with reference to affinity data on the same dyes obtained by desorption techniques. 12 references.

Non-barry dyeings on nylon fabrics by padding with Cibalan dyes.

Ciba Ltd. *Ciba Rev. 115:* 53-56 (June, 1956).

Acid salts and acid-yielding salts in wool dyeing.

R. Casty. *Ciba Rev. 115:* 50-52 (June, 1956).

Effect of solvents on wool dyeing.

M. Karrholm and J. Lindberg (Swedish Inst. for Textile Research). *(Letter to the editor). Textile Research J. 26:* 528-530 (July, 1956).

An increased dyeing rate has been obtained with many alcohols, partly soluble in water, whereas the lower, completely soluble alcohols have only a very small influence on the dyeing rate. It is theorized that through the absorption of alcohols, the epicuticle becomes almost homogeneously permeable to those dyes which are soluble in the alcohols. On the basis of the experimental data reported it is suggested that dye manufacturers investigate the possibilities of modifying their dyestuffs to be more suitable for water-solvent dyeing. 6 references.

Package dyeing. Part 2. The effect of liquor ratio on direct dyeing.

W. Armfield, J. Boulton, and J. Crank (Courtaulds Ltd.). *J. Soc. Dyers Colourists 72:* 278-286 (June, 1956).

Package dyeing has been carried out on a laboratory apparatus with a number of dyes, each in 6 and 20 volumes, with enough sodium chloride added at the commencement of dyeing to give roughly the same final exhaustion at the two liquor ratios for any particular dye. After 30 min. with the same rate of flow, the 6-vol. dyeing was always more level than the corresponding 20-vol. dyeing. The advantage gained by working in low volumes is shown to be due to an increase in the dyebath cycle rate, and an expression is given showing the relationship of this to yarn weight and rate of flow. The variation in yarn weight in bulk cake-dyeing is considered in so far as it affects liquor ratio and dyebath cycle rate. The results are examined in the light of a theoretical model of package dyeing. It is found that, when certain parameters are chosen to give a fit with measured skein-dyeing curves, the main conclusions about package dyeing based on the experimental results are substantiated by the model.

Interaction between Chlorazol Sky Blue FF and Chrysophenine G in aqueous solution.

A. N. Derbyshire and R. H. Peters (Imperial Chemical Industries Ltd.). *J. Soc. Dyers Colourists 72:* 268-277 (June, 1956).

The absorption spectra of mixtures of Chlorazol Sky Blue FF and Chrysophenine G in aqueous solution and adsorbed together on Cellophane sheet have been measured at room temperature and at 60°C. The formation of complexes of the two dyes in aqueous solution, deduced from the spectral measurements, has been confirmed by paper and column chromatography, and calorimetric measurements have been made to give an indication of the magnitude of the heat of complex formation. It is concluded that formation of a 1:1 complex occurs in aqueous solution which explains the change in adsorption of these dyes when applied from mixture dyebaths and may explain the general failure of data obtained on single dyes in predicting their behavior in mixtures.

Affinities of vat dyes.

L. Valentine *(Letter to the editor). J. Soc. Dyers Colourists 72:* 286-287 (June, 1956).

The influence of chelation within the dye molecule itself on the affinities of vat dyes for cellulose is pointed out.

Fluorescence of dyes in solution.

H. E. Millson (American Cyanamid Co.). *Am. Dyestuff Reptr. 45:* 434-440, 459 (July 2, 1956).

Results of fluorescence measurements by the author on various solutions of 45 dyes in daylight and in ultraviolet light are listed in tabular form together with the fluorescence values recorded in the 1924 edition of the *Colour Index* edited by F. M. Rowe. It is pointed out that most of the comments in the latter resulted from observations made in daylight only.

Tracing causes of uneven dyeing of mercerized cotton filling.

J. B. Goldberg. *Am. Textile Reptr. 70:* 93-95 (May 17, 1956).

Uneven dyeing may be traced to mixing lots of yarn with varying dye affinity, to differences in yarn processing and to dyeing and finishing faults. A case history involving filling shade bands in dress goods with 15 denier nylon warp, 60/2 mercerized cotton filling is given.

Direct printing with vat dyes by the Rongalite C potash process.

G. Bernardy. *Melliand Textilber. 37, No. 3:* 313-316 (1956); *in German.* Through *BCIRA 36:* 340 (1956).

In conclusion of previous articles (see *TTD 13:* 364 (1956)) the author discusses the application of the Rongalite C-potash process in direct vat-dye printing on cellulose acetate and acetate-blended fabrics, natural silk and mixed fabrics, and polyamide (nylon, Perlon, etc.) and polyacrylonitrile fabrics. Reference is made to various printing methods (screen, hand, and spray printing) and to warp- and yarn printing.

Historical notes on the wet-processing industry. Part 12. Callicoes and Indiennes —18th century printing.

S. M. Edelstein (Dexter Chemical Corp.). *Am. Dyestuff Reptr. 45:* 495-500 (July 16, 1956).

Practical interpretations of the results of laboratory investigations in the field of vat printing.

M. R. Fox. *Am. Dyestuff Reptr. 45:* P447-P451 (July 2, 1956).

This paper describes how specific electronegative potentials must be developed so that vat dyes will reduce when a print paste formulation is steamed. It indicates how minimum concentration of reducing agent and alkali must be maintained in the print formula and it attempts to explain the behavior of glycerol. Some explanation is given of the behavior of different thickening agents with regard to visual yields. 9 references.

Ribbon printing machine (small screen printing machine) with flock printing equipment.

R. Reisinger. *Textil-Praxis (English ed.) No. 2:* 90-92 (June, 1956).

Small-scale screen printing machine.

R. Reisinger. *Melliand Textilber. (English ed.) 37, No. 1:* 74-76 (1956).

Brief description of the Reisinger small-scale screen printing machine KSM designed to permit the application of any class of dyestuffs, in particular pigment colors, to all types of fabrics. It is particularly suitable for single and multi-color printing on smallwares.

The mechanization of screen printing. Parts 1 and 2.

Skinner's Silk & Rayon Record 30: 575-576 (June, 1956); 686-687 (July, 1956).

The actual printing process, steaming and after-treatment, and screen making are considered and various carriages designed for transporting the screen and squeegee from one repeat to the next are described.

Fewer diapositives in the production of screen printing stencils.

R. Kunzl. *Textil-Praxis (English ed.) No. 2:* 77-79 (June, 1956).

See *TTD 13:* 252 (1956).

MECHANICAL PROCESSES D 3

On bend-bar type roller expander.

K. Fujino and A. Horikawa (Osaka University). *J. Textile Machinery Soc. Japan 2:* 32-38 (April, 1956).

Results of theoretical studies on the expanding mechanism of the bend-bar type roll expander used to expand wrinkles of running cloth are given. The state of contact of cloth with the roller, the tension on the cloth, the longitudinal relaxation of the cloth caused by imperfect contact of cloth and roller, and expanding capacity were determined on a single as well as a triple roll expander.

A new shearing machine for velvets and velours.

O. Reinhardt. *Melliand Textilber. (English ed.) 37, No. 1:* 92-94 (1956).

See *TTD 13:* 313 (1956).

TESTING AND MEASUREMENT E

Guide to instrumentation literature.

W. G. Brombacher, J. F. Smith, and L. M. Van der Pyl. U. S. National Bureau of Standards, 1955. 160 p. Order from Superintendent of Documents, Government Printing Office, Washington 25, D. C. $1.00. PB 122 145.

Contains over 1200 references, including abstract journals, bibliographies, 660 books on technology, directories of manufacturers, guides to and indexes of technical literature, dissertations, patents, and specifications. Revision of PB 108 952 and *Sources of information on instruments,* by American Society of Mechanical Engineers.

A new cotton lustermeter.

D. Nickerson (U. S. Dept. of Agriculture). *Textile Research J. 26:* 552 (July, 1956).

Abstract of paper given at the Cotton Research Clinic, February 15-17, 1956, Pinehurst, N. C., on a single answer, direct-reading instrument especially adapted for measuring luster of raw cotton and gray and mercerized yarns.

Experimental design in industry.

F. Wilcoxon. *Ind. Laboratories 7:* 5-8 (August, 1956).

Examples of experimental design in industrial chemical research.

From research to decision.

M. Woodbury. *Ind. Laboratories 7:* 14-18 (August, 1956).

Use of quantitative information in industrial decision making.

Linear programming.

R. J. Freeman. U. S. Aberdeen Proving Ground. Ballistic Research Laboratories, Ab-

erdeen, Md., 1955. 22 p. Order from Library of Congress, Washington 25, D. C. Microfilm $2.70, photostat $4.80. PB 120 237.

The mathematical linear programming problem is described, and a practical explanation of the simplex method is provided. A numerical example is worked out to illustrate the technique. Other methods of solution are surveyed, and their relation to machine computation discussed. The practicability of putting such problems on Ordvac is taken up. A description of the transportation problem and a logical flow chart for its solution is presented. An extensive bibliography covering the literature of the field.

Accidental factors affecting the counting of stops, breakages, and faults.

H. Henning. *Textil-Praxis 11, No. 4:* 361-368 (1956); *in German.* Through *BCIRA 36:* 379 (1956).

Statistical methods are applied to evaluate the counting results.

Textile testing.

J. Lomax. Longmans, Green and Company, Inc., 55 Fifth Avenue, New York 3, N. Y., 1956. 218 p. $4.20.

This book covers the elements of the subject of textile testing and includes the more important tests with explanations and recommendations based on the author's own experience. This third edition contains substantial alterations and additions.

Testing and inspection in woolen manufacture.

Textile Recorder 74: 55-58 (May, 1956).

The need for a testing department is explained and the various methods used for testing and inspection at all stages of woolen manufacture are described.

FIBERS E 1

Methods of test for textiles. Part 15. Determining the fineness of fibers.

J. Lako and H. H. Kersten. *Enka Breda Rayon Rev. 10:* 109-112 (June, 1956).

A method for determining the fineness of wool and synthetic fibers with the help of a projection microscope is described. The data obtained for synthetic fibers were found to be in good agreement with those obtained on the Vibroscope.

The action of cuprammonium upon flax, hemp and ramie fibers.

H. Klenk. *Textil-Praxis (English ed.) No. 2:* 53-57 (June, 1956).

See *TTD 13:* 257 (1956) .

Rapid moisture determination in synthetic fibers.

N. A. Novikov and N. V. Demina. *Tekstil. Prom. 15, No. 10:* 47-48 (1955); *in Russian.* Summary in *BCIRA 36:* 163 (1956).

pH measurements of wool extracts: directions for procedure.

H. H. Buhler and H. Zahn. *Textil-Praxis (English ed.) No. 2:* 73-76 (June, 1956).

Results obtained with the IWTO (International Wool Textile Organization) method, an abbreviated method based on the former, and the heating method are compared. It is concluded that for more involved measuring the IWTO standard method should be used; for technical purposes the rapid method is adequate. On alkaline specimens, the heating method gives divergent values.

YARNS E 2

The loom-action-type abrader.

R. P. Ramirez and J. P. Vidosic (Georgia Inst. of Technology). *Textile Research J. 26:* 531-533 (July, 1956).

This paper reports a warp yarn abrader which incorporates as nearly as practical the abrasive-tensile actions of the actual loom operation for evaluating objectively the effectiveness of each new batch of sizing. Diagrams. 4 references.

Investigations into the performance of the Zellweger-Uster and Fielden-Walker evenness testers and their integrators.

W. A. Nienhuis, J. Stomph, and C. J. Van Zwet. *Meded. Vezelinst. T. N. O. No. 112:* 1-20 (1955); *in Dutch.* Through *BCIRA 36:* 342 (1956).

Continuing the investigations into the oversensitivity of the first two slots of the Zellweger tester (*J. Textile Inst. 46:* P790-P793 (1955)), the authors compared the results with those obtained by the Fielden tester. Both testers were found to register the mass of the sliver sufficiently correctly and the graphs were in satisfactory agreement. The integration time for both integrators is lower than indicated by the manufacturer (1 min for the Zellweger- and 1.5 min for the Fielden-integrator, instead of 2 min). For accurate measurements, special precautions must be taken.

Some theoretical considerations on the irregularity of drafting.

K. Mihira (Yamagata University). *J. Textile Machinery Soc. Japan 2:* 1-9 (April, 1956).

The author describes, from a statistical viewpoint, three methods of analyzing the irregularity of drafting by evenness of sliver: (1) the method of curve analysis of evenness by utilizing the time series theory, (2) the method of obtaining the variation-length curve of long-term irregularity of sliver by using the stochastic process, and (3) the method of obtaining the variation-length curve of short-term irregularity by utilizing probability. Interrelations among these methods are also explained. 8 references.

Trouble shooting in textile processing by use of the Brush uniformity analyzer.

E. J. Bernet, G. Z. Dunn, Jr., and W. C. Harris (Institute of Textile Technology). *Textile Research J. 26:* 569-577 (July, 1956).

Sources of variation in yarn, roving, or sliver due to mechanical faults during cotton processing are pointed out. Most of these mechanical faults have a particular pattern which can be distinguished by proper use of the uniformity analyzer. There are certain settings (pen average, pen sensitivity, chart speed, and material speed) which can be used on the Brush uniformity analyzer to assist in the search for periodic variations. The particular setting to use when searching for periodicities is generally dependent upon the distance between the expected periodic variation. Recommended settings to determine periodic variations are given.

Study on the evenness of yarns spun on ring spinning frame.

M. Yamaguchi (Tokyo Institute of Technology). *J. Textile Machinery Soc. Japan 2:* 20-26 (April, 1956).

This article gives a brief description of a method of evaluating the evenness of yarn. Consideration is given to the effects of roll distance, roll weighting, twists, and draft. The method described is claimed to give good results for practical use, and these results coincide fairly well with those obtained by experience.

Roving inspection in woolen spinning.

M. Rentke. *Textil-Praxis (English ed.) No. 2:* 65-67 (June, 1956).

A critical survey of the methods employed for inspection of roving uniformity.

A continuous method of measuring yarn modulus.

H. M. Brown (School of Textiles, Clemson Agricultural College). *Textile Research J. 26:* 565-568 (July, 1956).

In the continuous yarn testing machine developed at Clemson, the problem of slippage is solved by means of snubbing drums. Applications and advantages of the machine are discussed.

Dynamometer for determining the strength and elongation of the running thread.

A. V. Krylov and N. I. Krupskii. *Tekstil. Prom. 15, No. 11:* 38-39 (1955); *in Russian.* Through *BCIRA 36:* 197 (1956).

The apparatus, described and illustrated, makes it possible to control the strength and elongation of a single running thread by determining its load dyamometrically without producing conditions causing breakage of the thread.

Method for direct measurement of the volume of swollen yarn.

K. Sehested and T. Sorensen. *Tidsskr. Textiltek. 4, No. 4:* 57-59 (1956); *in Danish.* Through *BCIRA 36:* 374 (1956).

In the method described, the volume increase of swollen fibers is measured directly, by subjecting the wet material to a series of measurements while removing the water gradually *in vacuo.* By plotting the values obtained against the time of the successive water-removal treatments, characteristic curves were obtained for flax, cotton, and Perlon.

FABRICS E 3

Testing the flame resistance of textiles.

H. J. Reese. *Melliand Textilber. 37, No. 3:* 324-326; *No. 4:* 457-461 (1956); *in German.* Through *BCIRA 36:* 344 (1956).

Methods for testing the flammability of textile fabrics are reviewed, and results of comparative tests carried out to determine the accuracy of the different methods and the efficiency of fire- and flame-resistant finishes on various types of fabrics are discussed and tabulated.

Atmospheric gas fading of dispersed acetate dyestuffs on acetate fabrics.

A. Greyborn (Bruck Mills, Ltd). *Can. Textile J. 73:* 46-48 (July 13, 1956).

A laboratory apparatus, using nitrogen gases generated by chemical means and injected into a closed chamber, for the measurement of gas fading is described and illustrated. 5 references.

Factors causing variations in judgment of fabric.

M. M. Taylor. *J. Textile Inst. 47:* P411-P458 (June, 1956).

The causes of variation in the assessment of the quality of rayon fabrics are considered under the categories: (1) variation in viewing or sighting conditions; (2) variation due to fabric examiner; (3) variation of standard after dyeing and

finishing; and (4) variation of standard adopted in merchandising. The most important factor is probably illumination and the need for its standardization is emphasized. 21 references.

Determination of warp and weft shrinkage from the number of ends per inch and the yarn count.

R. Knecht-Lander. *Melliand Textilber. 37, No. 3:* 265-266 (1956); *in German.* Through *BCIRA 36:* 343 (1956).

The tables given show the shrinkage for cotton and half linen fabrics in warp and weft direction. An example is given to explain the use of the tables.

Hotel textile purchasing guide: incorporating the new American standard L24.

L. A. Bradley. American Hotel Association, 221 West 57th Street, New York 19, N. Y., 1956. 111 p. $7.50.

Under the sponsorship of the American Hotel Association, a project was established in 1953 by the American Standards Association to develop minimum performance requirements for institutional textiles. This manual explains the system used to develop the standards, which became official in December, 1955, and tells how they can be used in purchasing linens for hotel use. Other sections of the manual describe ways and means of controlling, conserving, and laundering for maximum useful life.

American standard minimum performance requirements for institutional textiles, L24.

Available from American Standards Association, Inc., 70 East 45th Street, New York 17, N. Y., 1956. $6.25.

Covers institutional furnishings, utility textiles, uniforms, work clothes, test methods to be used in conjunction with the standards, and permanent labels, detachable tags, and certification of fabrics or products. The project was sponsored by the American Hotel Association.

Measurement of fabric temperatures by means of thermactinic radiation.

J. Juilfs. *Forschungsber. Wirtsch. u. Verkehrsmin. Nordrhein-Westfalen No. 199:* 1-36 (1955); *in German.* Through *BCIRA 36:* 375 (1956).

Investigations have shown that the surface temperature of stationary and moving textile materials can be determined with satisfactory accuracy by means of thermactinic radiation measurements. The color of the material has no effect on the accuracy of the measurement, but metallized and similarly finished fabrics require special adjustment of the apparatus developed for this purpose, which consists of a receiving element, a sensitivity and zero-point regulator, and an amplifier with recorder. This apparatus makes it possible to measure the temperature of the cloth during drying, fixing, and condensing processes and to adjust it by suitable control devices.

OTHER E 4

Testing the tendency to oxidation of textile lubricants.

M. Kehren and W. Scharroba. *Melliand Textilber. 36, No. 8:* 824-827; *No. 10:* 1043-1049 (1955); *in German.*

A review. 46 references.

Examination of carbamide- and melamine-formaldehyde compounds, with special reference to etherified precondensates.

W. Bitterli. *Textil-Rundschau 10, No. 12:* 653-658 (1955); *in German.* Summary in *BCIRA 36:* 158 (1956).

Colorimetric evaluation of color gradients in the woolen and worsted industries.

R. E. Derby, Jr. *Am. Dyestuff Reptr. 45:* P406-P409, P415 (June 18, 1956).

A method of quantitatively evaluating color gradients or "shadiness" in wool and wool-like textiles is outlined. The procedure is based on spectrophotometric colorimetry coupled with statistical analysis. The color difference formula widely known as the Adams-Nickerson equation is used as a basis for determining the magnitude of the color differences involved. 5 references.

Tests for recognizing the fast bases of the naphthol-AS-type by means of micro-sublimation.

W. Kunze. *Textil-Praxis (English ed.) No. 2:* 87-90 (June, 1956).

Microphotographs of sublimated fast bases are given and the method of sublimation described. It is pointed out that the main drawback of the process is lack of adequate temperature control.

A study of the destructive action of home gas-fired dryers on certain dyestuffs.

A. I. Hultberg and others. *Am. Dyestuff Reptr. 45:* P471 (July 16, 1956).

The fading of cotton textiles in home gas-fired dryers was traced to combustion products of the gas and is characteristic of those dyestuffs which are sensitive to oxides of nitrogen while the textile material is in the wet state. A laboratory procedure, using acidified nitrite solution, was devised which predicts the sensitivity of dyes on cottons in home gas-fired dryers.

Comparative tests on the fastness to gas

fading of dyes on cellulose acetate fibers.

P. Rabe and R. Dietrich. *Melliand Textilber. 37, No. 3:* 321-324 (1956); *in German.* Through *BCIRA 36:* 343 (1956).

Methods for determining the fastness of dyeings to gas fading are reviewed. 28 references.

A rapid spot test for the identification of aminoplasts on textiles.

W. J. Van Loo, Jr., J. M. Salsbury, and F. L. Andrew (American Cyanamid Co.). *Am. Dyestuff Reptr. 45:* 397-398, 421 (June 18, 1956).

A spot test for distinguishing between methylolated urea, ethylene urea, melamine, and certain combination finishes on fabrics is presented. The test method is based on the differences in rates of acid hydrolysis of the various resins. The formaldehyde released during hydrolysis is reacted first with phenyl hydrazine and then with ferric chloride to give a characteristic stain within thirty seconds. 10 references.

Hygrometric slide rule.

T. Shoman (Toyo Spinning Co., Ltd). *J. Textile Machinery Soc. Japan 2:* 58-60 (April, 1956).

The author describes a hygrometric slide rule used to calculate the relative humidity from the wet and dry bulb temperatures in calm air.

Correct use of temperature instruments.

A. L. Forrester. *Dyer 116:* 59-65 (July 6, 1956).

The important factors in temperature measurement, in relation to bulb or sheath position and design, to achieve maximum accuracy are considered in light of the conditions under which measurement or automatic control will have to take place in the plant. Diagrams.

Special camera for analyzing rotating bodies.

J. Textile Machinery Soc. Japan 2: 67-68 (April, 1956).

The number of revolutions of a rotating body, the fluctuation of speed during one revolution, the deflection of the rotating shaft and its vibration, etc., can be photographed upon a single film with this camera, without touching the rotating body at all. Illustrations of its use are given. Diagram.

INDUSTRIAL ENGINEERING F

MACHINERY AND MAINTENANCE F 1

Textile applications of an automatic clutch coupling.

Twiflex Couplings Ltd. *Textile Mfr. 82:* 349-350 (July, 1956).

The Twiflex coupling serves as a torque limiting device according to the torque/speed requirement of the driven machine, and in this way assures smooth acceleration over a pre-determined period. Overloading is safeguarded by its closely controlled overload slip characteristics. Its mechanical features are described and its applications are noted.

Bearings, lubricants, and lubrication: a digest of 1955 literature.

H. A. Hartung and others. *Mech. Eng. 78:* 703-714 (August, 1956).

208 references.

Importance of effective maintenance. Parts 1 and 2.

K. M. Hagar (Canadian Westinghouse Co. Ltd). *Can. Textile J. 73:* 64-66 (May 4, 1956); 53-55 (May 18, 1956).

Part 1 outlines a program of preventive maintenance for motors and generators and Part 2 covers heater capacities, ventilation to facilitate the escape of moisture present or released as a result of heating, and a method for locating and numbering terminal wires on two voltage, three phase induction motors.

How to get the most out of paint.

F. B. Leitzsey. *Textile World 106:* 98-99 (June, 1956).

Factors necessary to establish a well-rounded maintenance program are inspection of old surfaces, surface preparation, selection of paint, and application of paint. A table of the comparative corrosion resistance of paints applied to metals is included.

Flow control of duct system.

Y. Niitsu and M. Kurahashi (Osaka University). *J. Textile Machinery Soc. Japan 2:* 51-57 (April, 1956).

Two methods of obtaining uniform duct-system distribution of air flow from each branch pipe or of adjusting air flow to specific conditions without changing the existing duct system in spinning mills are presented. Equations. 6 references.

WASTE DISPOSAL F 2

Challenge to research by water- and air-pollution problems.

R. W. Hess (Allied Chemical & Dye Corp.). *Am. Dyestuff Reptr. 45:* 441-444, 459 (July 2, 1956).

The need for research in determining water

and atmospheric quality indices, as well as for waste control and analytical methods, is pointed out.

Pollution sources from finishing of synthetic fibers.

J. W. Masselli and M. G. Burford. 1956. 24 p. Available from New England Interstate Water Pollution Control Commission, 73 Tremont Street, Boston 8, Mass.

This report records the research conducted for the Commission by Wesleyan University on wastes resulting from the finishing of synthetic fibers, and provides a companion report to those previously published by the Commission on cotton and wool mill wastes. Included in this report is a summary of the results of all three studies. 19 references.

QUALITY CONTROL F 3

Textile quality control papers. Vol. 3.

American Society for Quality Control. Textile Division, 1956. 233 p. Copies may be ordered from D. S. Hamby, Editor, School of Textiles, North Carolina State College, Raleigh, North Carolina. $5.00.

The following papers are presented: *Guaranteed cotton qualty,* by G. Jones, p. 1-5; *Guaranteed quality fabrics,* by G. H. Bass, p. 6-9; *Guaranteed quality for the retail customer,* by B. J. Labarthe, p. 10-15; *Advertising and promotion of guaranteed quality,* by W. P. Wright, Jr., p. 16-23; *Trouble shooting in textile processing by use of the Brush uniformity analyzer,* by E. J. Bernet, G. Z. Dunn, Jr. and W. C. Harris, p. 24-50; *Relation of yarn uniformity to fabric appearance,* by L. C. Doggett and E. J. Bernet, p. 51-61; *Report on meeting of Manufacturers' Quality Control Conference,* by M. J. Lovell, p. 62-69; *Effect of twist on roving strength,* by J. Simpson, C. B. Landstreet, G. Schnabel and H. Hutchens, p. 70-78; *No twist roving,* by E. S. Rudnick, p. 79-82; *Optimum twists for yarns,* by J. Duerst, p. 83-85; *Outline of the universal percent twist system,* by O. E. Heiberg, p. 86-94; *Effects of fiber fineness (Micronaire) on the weaving contraction in selected cotton fabrics,* by H. G. Kennamer, Jr., S. C. Mayne, Jr. and E. E. Berkley, p. 95-113; *Diagnosis for quality control in a spinning mill,* by J. H. Enters, p. 114-126; *Some textile applications of statistics,* by J. K. Frederick, Jr., p. 127-148; *Quality control in the textile manufacturing process,* by C. L. Adams, p. 149-151; *A practical approach to evenness testing in a worsted mill,* by M. Romer, p. 152-164; *Effect of cotton fiber length and fineness on the twist to produce maximum strength in singles yarn,* by C. B. Landstreet, p. 165-172; *Study on defects causing the greater number of rejects from end use in manufacturing shirts,* by G. W. Edwards, p. 173-175; *Modified F-ratio table for simplified variations analysis,* by N. L. Enrick, p. 176-179; *Management of quality control in cotton manufacturing,* by O. P. Beckwith, p. 180-190; *Fabric grading,* by W. L. Clement, Jr., p. 191-194; *Report of Staple Fiber Yarn Task Group (1955),* by J. Simpson, p. 195-201; *Picker lap quality,* by Z. Szaloki, p. 202-211; *Factors affecting drafting force,* by W. S. Smith, p. 212-214; *Report of the Staple Fiber Sliver and Roving Task Group,* by C. L. Harris, N. L. Enrick and W. D. Hicks, p. 215-217; *Some observations on maximum yarn strength and its relation to processing efficiency,* by L. A. Fiori and J. E. Sands, p. 218-226.

ASQC national convention transactions 1956.

American Society for Quality Control, Room 6197, Plankinton Building, 161 West Wisconsin Avenue, Milwaukee 3, Wisconsin, 1956. 694 p. $3.50.

The following papers are concerned with textile applications: *Quality control in a coarse goods mill,* by R. R. MacNeil, p. 447-450; *Statistical quality control applications to textile processing,* by R. Archambault, p. 523-524; *Integrated quality control from weaving to sewing,* by F. Golden, p. 631-645.

Raising productivity in cotton mills: method of group-norm charts.

B. B. Joshi, J. D. Parikh and S. S. Bose. *Indian Textile J. 66:* 463-467 (May, 1956).

Use of control charts for control of production by machine, man, and group averages.

Quality control aid for spinners.

A. E. De Barr. *Textile Merc. 135:* 116-117, 119 (July 20, 1956).

Illustrations of equipment, available through Textile Machinery Makers Ltd., for spinning very small samples of staple fibers. Includes testing and sampling procedures.

Automation and the textile industry.

D. Brunnschweiler. *Textile Merc. 135:* 101-105 (July 20, 1956).

Actual and potential applications of automation to spinning, weaving, finishing, and textile testing are discussed.

OTHER F 4

Textile fire fighting and precautionary steps.

Am. Textile Reptr. 70: 11-13, 41 (July 26,

1956).

Control measures once a fire has started should include sprinklers, portable extinguishers, alarm systems, and a trained employee fire brigade to minimize fire damage. A table of recommended portable fire extinguishers is given.

Evaluating production performance.

D. V. Bierwert (Monsanto Chemical Co.). *Chem. Eng. 63:* 189-192 (May, 1956).

Method for deriving performance indexes based on standard costs is presented.

Yarn and machinery organization for a print cloth mill.

J. H. Bolton, Jr. (Whitin Machine Works). *Textile Age 20:* 36-39 (April, 1956).

Yarn and machinery organization suggested covers a mill making a print cloth 39 inches wide, 80 x 80 construction, of 30s single warp and 40s single filling, 4 yards to the pound. A summary of costs for machinery and direct labor is included.

Incentive schemes: work study as a basis.

R. Tattersall. *Textile Wkly. 56:* 104-106 (July 13, 1956); 176-178 (July 20, 1956).

Illustration of workload and cost calculations.

Problems of the multiple machine attendance.

E. Oberhoff. *Melliand Textilber. 37, No. 3:* 331-335 (1956); *in German.* Through *BCIRA 36:* 352 (1956).

The calculation of wages on the basis of time required for each operation, optimum number of machines per worker, and determination of the total work performed are discussed.

Distribution of looms between weavers.

V. Luzet. *Rayonne et Fibres Synthet. 12, No. 4:* 489-494 (1956); *in French.* Through *BCIRA 36:* 379 (1956).

A simple graphical method is described by means of which the optimum number of looms per weaver can be accurately determined.

SCIENCES G

CHEMISTRY G 1

Fixation of metallic ions by degraded cellulose.

A. Parisot and J. Cyrot. *Ann. Sci. Textiles Belges No. 4:* 185-205 (1955); *in French.* Through *BCIRA 36:* 234 (1956).

The polarographic method, used for determining the amount of metal fixed by cellulose, showed that the fixation of metal ions by a cellulose containing carboxyl groups is affected by the pH of the wetting solution, the amount being proportional to the pH of the solution.

Pyrolysis of cellulose in a vacuum.

S. L. Madorsky, V. E. Hart and S. Straus. *J. Research National Bureau of Standards 56:* 343-354 (June, 1956).

Samples of cotton, cotton hydrocellulose, and viscose rayon, both by themselves and impregnated with sodium carbonate or sodium chloride, were pyrolyzed at 250° to 397° C in a high vacuum. The volatile products were fractionated and the fractions analyzed in the mass spectrometer and by infrared absorption. Rates of thermal degradation of the same materials were investigated in the range 245° to 305° C by a loss-of-weight method, using a very sensitive tungsten spring balance enclosed in a vacuum. The activation energies of thermal degradation of the pure cellulosic materials are much greater than those of the same materials impregnated with sodium carbonate or sodium chloride. 10 references.

Heterogeneous acid hydrolysis of native cellulose fibers.

E. A. Immergut and B. G. Ranby (University of Uppsala). *Ind. Eng. Chem. 48:* 1183-1189 (July, 1956).

This investigation was performed to study structural differences between the resistant portions of native wood and cotton cellulose fibers. The data demonstrate a gradual, lateral, hydrolytic attack on the wood cellulose micelles only, indicating a basic difference in resistance between native wood and cotton cellulose fibers.

The cellulose—sodium hydoxide—water system in the cyanoethylation of cotton cellulose.

J. W. Weaver, E. Klein, B. G. Webre, and E. F. DuPre (Southern Regional Research Laboratory). *Textile Research J. 26:* 518-523 (July, 1956).

When cotton is cyanoethylated with a large excess of acrylonitrile in the presence of aqueous alkali at fixed time and temperature, the extent of cyanoethylation and by-product formation is controlled by the ratios of cellulose, sodium hydroxide, and water employed. The mechanical restraints offered by the yarn and fabric structures alter these optimum conditions as well as the extent of cyanoethylation which takes place. Cyanoethylated cottons, having essentially equal nitrogen contents but different properties, can be prepared from a large number of compositions of cellulose, sodium hydroxide, and water. High sodium hydroxide contents in the starting mixtures result in substantial conversion to carboxy-

ethyl groups with a subsequent loss of resistance to microbiological attack. 12 references.

The role of interfacial electrical conditions in detergency.

K. Durham. *J. Appl. Chem. 6:* 153-161 (April, 1956).

It is shown that the particle size of the soil, and the concentration and valency of electrolyte, are important parameters which determine the influence of interfacial electrical conditions in detergency. It is also shown that ease of soil removal is incompatible with a high degree of stability against redeposition. Reasons for the lack of correlation between interfacial electrical conditions and detergent efficiency are given.

Kinetics of the washing process in the case of oily soilings.

W. Kling and H. Lange. *Kolloid Z. 142, No. 1:* 1-5 (1955); *in German.* Through *BCIRA 36:* 345 (1956).

The calculations of Kling and Koppe referring to the detergency determination have been extended to the case in which the detergent solution does not cause complete removal of the soil but only partial wetting, up to a certain equilibrium border angle. An equation is derived to calculate the work necessary for complete removal of the oil: this work (residual detergency) is shown to be reduced by anionic detergents. Further experiments are required in order to ascertain the extent to which this new value is applicable to the evaluation of detergents.

Detergent screening tests.

R. C. Ferris and L. O. Leenerts (Purex Corp.). *Soap Chem. Specialties 32:* 37-39, 46 (July, 1956).

The detergency screening test described makes use of a soiled cloth prepared from natural dirt in addition to the carbon black type soil. The method of producing the Purex dry soil cloth and experimental data are included. 18 references.

Radioactive tracer techniques in fabric washing studies.

C. Manos (Colgate-Palmolive Co.). *Soap Chem. Specialties 32:* 31-32, 46 (July, 1956).

The specific uses of radioisotopes in detergency research are outlined.

Properties of periodate oxidized starch.

J. W. Sloan, B. T. Hofreiter, R. L. Mellies and I. A. Wolff. *Ind. Eng. Chem. 48:* 1165-1172 (July, 1956).

A series of products was prepared chemically, covering the entire range of starch oxidation by periodate under conditions chosen to minimize degradation and the occurrence of side reactions. The properties of starch were found to be profoundly modified by periodate oxidation.

PHYSICS G 2

Effects of gamma radiation on textile materials.

J. McGrath and R. H. Johnson. U. S. Air Force. Air Research and Development Command. Wright Air Development Center. Materials Laboratory, Wright-Patterson Air Force Base, Dayton, Ohio, 1956. 33 p. Order from Office of Technical Services, Washington 25, D. C. $1.00. PB 121 206.

The primary purpose of this investigation was to obtain data on the effect that exposure to high energy gamma radiation, for specific periods of time, would have on various parachute textile materials, also to determine if the use of parachute marking ink would increase or speed up the degradation of the materials.

BIOLOGY G 3

Mixed yarns from wool and chemical fibers. Part 3. The behavior of yarn blends from wool and synthetic fibers during the soil-burial test.

H. Zahn and E. Kratzsch. *Melliand Textilber. 37, No. 3:* 286-289 (1956); *in German.* Through *BCIRA 36:* 343 (1956).

Mixed yarns from wool and Perlon, Dralon, and Diolen were examined with regard to their resistance to micro-organisms in the soil-burial test. The properties of the mixture components remained unaffected. The man-made fibers were more resistant to the attack of micro-organisms. For parts 1 and 2 see *TTD 13:* 260, 318 (1956).

Effect of quaternary treatment under varied ratios of weight-volume-concentration on the bacteriostatic property of fabrics.

M. T. Goldsmith, M. A. Latlief, J. L. Friedl and L. S. Stuart (U. S. Agricultural Research Service.) *Appl. Microbiol. 4:* 91-94 (1956).

Samples of desized cotton, wool, and nylon were treated with quaternary (alkyl(C_9-C_{15}) tolylmethyl) trimethylammonium chlorides. Bacteriostatic properties were imparted to cotton more readily than to wool or nylon. The concentration of the treating solution appears to be the controlling factor in imparting practical bacteriostatic property to cotton fabric, rather than the ratio of the quaternary-fabric weights.

PATENT CHECKLIST

U. S. Patents may be obtained from the U. S. Patent Office, Washington 25, D. C., for 25 cents per copy. Photostatic copies of foreign patents are available. Charges for these photostats are based on the number of pages in the patent.

FIBERS A

NATURAL FIBERS A 1

Separatory apparatus for concentrating asbestos fibers.

J. J. Denovan and R. A. Denovan (to Hall Machinery of Canada Ltd). USP 2 739 708, March 27, 1956.

Decorticating apparatus.

W. G. Waldo. USP 2 753 600, July 10, 1956.

Removal of fibers from the stalks of abaca, ramie, etc., through a cutting and scraping action, and the commercial recovery of the fiber in long, clean, and straight condition.

MAN-MADE FIBERS A 2

Apparatus for cutting filaments into uniform lengths.

A. Marek (to A. Maurer SA). USP 2 753 000, July 3, 1956.

YARN PRODUCTION B

Claw-brake type thread tensioning device.

S. Fürst and H. Beckers (to Walter Reiners). USP 2 754 071, July 10, 1956.

Improvement of the claw brakes by means of an external magnetic force to counteract the tension exerted by the passing thread.

OPENING, PICKING, FIBER PREPARATION B 1

Fiber deflector for a cotton working machine comprising a suction flue, a cotton working cylinder and a doffer within the flue.

R. C. Young and R. A. Rusca. USP 2 745 144, May 15, 1956.

DRAWING AND ROVING B 3

Top drafting roller.

SKF Kugellagerfabriken GmbH. BP 737 993, October 5, 1955. Through *BCIRA 36:* 360 (1956).

Belt guide cradle assembly for a double-belt drafting apparatus.

J. Noguera (to Casablancas High Draft Co. Ltd). BP 738 044, October 5, 1955. Through *BCIRA 36:* 359 (1956).

Device for parallelizing and drawing textile fibers.

R. Lepoutre. BP 738 139, October 5, 1955. Through *BCIRA 36:* 359 (1956).

Drafting apparatus.

G. F. Raper. BP 738 462, October 12, 1955. Through *BCIRA 36:* 359 (1956).

Drawing frame pressing rollers.

C. L. Scowen (to Patent Textile Rollers (1923) Ltd). BP 738 493, October 12, 1955. Through *BCIRA 36:* 359 (1956).

Twisting device.

F. von Schmoller and N. Winter. USP 2 753 679, July 10, 1956.

Means for increasing the percentage of total roving twist inserted between the roller nip and the flyer top.

Stop motion devices.

S. J. Adams. USP 2 754 653, July 17, 1956.

Drop wire assembly for automatically stopping roving and drawing machines when a strand breaks or acquires an excessive amount of slack.

SPINNING, WINDING, TWISTING B 4

Spinning or twisting spindle (lubricating).

H. Staufert. BP 737 875, October 5, 1955. Through *BCIRA 36:* 360 (1956).

Spindle that can be brought through the critical speed without vibration.

SKF Kugellagerfabriken GmbH. BP 738 156, October 12, 1955. Through *BCIRA 36:* 360 (1956).

Revolving under-clearer roller for the front bottom rollers of a ring frame.

G. Smith (to English Sewing Cotton Co. Ltd). BP 738 235, October 12, 1955. Through *BCIRA 36:* 360 (1956).

Winding spindle driven by contact with a traveling belt.

E. Findlow (to Ernest Scragg & Sons Ltd). BP 738 535, October 12, 1955. Through *BCIRA 36:* 361 (1956).

Yarn pack from which yarn may be withdrawn without causing the pack to collapse.

H. Buddecke. BP 738 821, October 19, 1955. Through *BCIRA 36:* 361 (1956).

Twisting head for spinning and twisting frames.

F. Hadwich (to Schiess AG). USP 2 752 748, July 3, 1956.

Regularizing the tension of threads in spinning.

P. de Halleux (to Doutors Societe Anon. Holding). USP 2 752 749, July 3, 1956.

Method and apparatus for winding textile bobbins.

R. C. Gutermann (Switzerland). USP 2 753 124, July 3, 1956.

Method and apparatus for winding up strands of synthetic filaments.

A. Wurmli (to J. J. Rieter & Co. Ltd). USP 2 753 125, July 3, 1956.

Yarn winding drum having grooves encircling opposite ends of the drum to form a figure eight.

P. B. Marcellus (to Barber-Colman Co.). USP 2 753 126, July 3, 1956.

Motor controlled winding tension system.

J. V. Keith and R. C. Savage (to Universal Winding Co.). USP 2 754 459, July 10, 1956.

A winding machine capable of winding under light tension and at high speed a strand of yarn that is continuously advancing at a substantially constant speed, so that tension in the yarn controls the speed at which it is wound.

YARNS B 5

Tire cord.

W. J. Lyons and I. B. Prettyman (to Firestone Tire & Rubber Co.). USP 2 755 214, July 17, 1956.

Rubber-reinforcing tire cord with a nylon or polyester center core about which several rayon yarns are twisted.

FABRIC PRODUCTION C

Differential control for beam let-off drive or the like.

J. B. Thomas and D. E. Woody (to Reliance Electric and Engineering Co.). USP 2 753 128, July 3, 1956.

WARPING, SLASHING, YARN PREPARATION C 1

Yarn tensioning device.

W. S. Brown (to British Celanese Ltd). BP 738 169, October 12, 1955. Through *BCIRA 36:* 363 (1956).

Mechanism for automatically controlling cop changing on a winding machine.

W. Reiners (Germany). BP 738 563, October 19, 1955. Through *BCIRA 36:* 363 (1956).

Mandrels for yarn packages on winding machines.

G. W. Rushton. BP 738 604, October 19, 1955. Through *BCIRA 36:* 363 (1956).

Feeding empty bobbins from a supply source to the winding units of an automatic bobbin-changing winder.

W. Reiners (Germany). BP 738 615, October 19, 1955. Through *BCIRA 36:* 363 (1956).

Expansible core-holding mandrels for bobbin winding machines.

W. Eheim. BP 738 704, October 19, 1955. Through *BCIRA 36:* 363 (1956).

Magnetic slip coupling for driving a winding machine.

H. Scowcroft and J. France (to T. M. M. (Research) Ltd). BP 738 791, October 19, 1955. Through *BCIRA 36:* 363 (1956).

A braking device for section beams of a warp slasher.

R. M. Ingham, Jr. (to Deering Milliken Research Corp.). USP 2 752 658, 659, July 3, 1956.

Slasher.

A. L. Park (to Saco-Lowell Shops). USP 2 752 660, July 3, 1956.

WEAVING C 2

Carpet weaving looms of the type provided with a wire motion.

A. F. Craig (to A. F. Craig & Co. Ltd). BP 737 799, October 5, 1955. Through *BCIRA 36:* 364 (1956).

Double carpet loom.

R. Davies (to Carpet Trades Ltd). BP 737

869, October 5, 1955. Through *BCIRA 36:* 365 (1956).

Center weft-fork motions for looms.

N. Hargreaves. BP 738 260, October 12, 1955. Through *BCIRA 36:* 364 (1956).

Loom stop motion.

A. Gillespie (to A. F. Craig & Co. Ltd). BP 738 408, October 12, 1955. Through *BCIRA 36:* 364 (1956).

Device for moving the picker stick with greater velocity.

E. Muller (Switzerland). BP 738 430, October 12, 1955. Through *BCIRA 36:* 364 (1956).

Jacquard mechanism of the triple shed type.

H. Batty, J. Ashworth, and M. Brown (to John T. Hardaker Ltd). BP 738 432, October 12, 1955. Through *BCIRA 36:* 364 (1956).

Laminated picking stick.

W. E. B. Jaffe (to T. H. Prosser & Sons Ltd). BP 738 871, October 19, 1955. Through *BCIRA 36:* 364 (1956).

Link for a textile pattern chain.

S. Garner and A. W. H. Porter (to F.N.F. Ltd). USP 2 741 107, April 10, 1956.

Carpet weaving looms of the type provided with a wire motion.

A. F. Craig (to A. F. Craig and Co. Ltd). USP 2 752 954, July 3, 1956.

Stafford type thread cutter for looms.

P. C. Consoletti (to Draper Corp.). USP 2 752 955, July 3, 1956.

Loom drive.

F. A. Lovshin and J. Jaffe (to Sidney Blumenthal & Co., Inc.). USP 2 753 894, July 10, 1956.

Electro-magnetic-mechanical stop motion device discontinues the drive and gives shockless loom stoppage.

Hydraulic loom check device.

A. E. Zarn (to Pneumafil Corp.). USP 2 753 895, July 10, 1956.

A hydraulic check device adapted to cushion movement of the picker stick in either direction and easily fitted underneath the lay of the loom.

Pile fabric cutting device.

P. Greenwood. USP 2 754 564, July 17, 1956.

Pile cutting arrangement for pile fabric looms in which the driving mechanism for the knife-carrying truck includes only parts moving always in the same direction.

Patterned pile carpets.

F. W. E. Hoeselbarth (to C. H. Masland & Sons). USP 2 754 850, 856, July 17, 1956.

Weaving patterned pile carpets on a velvet loom, without using a jacquard or other selective pattern device, to produce various pattern effects in the same fabric, as cut and uncut, wavy and straight, high and low, plain twist and frieze.

Loom picker.

W. E. Lundgren. USP 2 754 851, July 17, 1956.

Means for securely fastening a picker to the upper end of the picker stick so the picker can be adjusted either up or down on the picker stick in minute amounts.

Shuttle check.

C. R. Moore. USP 2 754 852, July 17, 1956.

An easily removable, reversible, resilient check which cushions the shuttle impact shock so that no damage occurs to the picker.

Multicolor weft replenishing loom.

C. P. Bergstrom (to Crompton & Knowles Loom Works). USP 2 754 853, 854, July 17, 1956.

Multishuttle looms with rotary reserve bobbin magazine to make use of all the bobbins of a group before bringing the next group into action.

KNITTING C 3

Switch for warp knitting machine stop mechanism.

D. Pernick and F. L. Aibel. USP 2 752 767, July 3, 1956.

Automatic stop-motion arrangements for knitting machines and the like.

R. Buck, C. Wessner and H. Kessler (to Fouquet-Werk, Frauz & Planck). USP 2 752 768, July 3, 1956.

Welt implement.

A. P. Saunders (to Wildt and Co. Ltd). USP 2 753 704, July 10, 1956.

For use in full-fashioned hosiery machines with spring beard needles.

Knitting patterning mechanism.

F. E. Deans, C. H. Wainwright, and T. L. Mountain (to Bentley Engineering Co. Ltd). USP 2 754 668, July 17, 1956.

Pattern drum for knitted goods which are

symmetrical about the center line in their length, e.g. stockings.

Circular knitting machine.

V. J. Lombardi. USP 2 754 669, July 17, 1956.

Means for imparting a retractive half-wave to knitting elements in an opposite direction to the normal half-waves.

FINISHING AND CHEMICAL PROCESSING D

Conveyor reel for a skein transporting arrangement.

W. Huber (to Stoffel & Cie). USP 2 752 031, June 26, 1956.

CHEMICAL PROCESSES D 1

Flocking on an adhesive-coated running web.

R. J. Brown and J. Downing (to British Celanese Ltd). BP 738 290, October 12, 1955. Through *BCIRA 36:* 371 (1956).

Anti-soiling treatment.

Boehme Fettchemie GmbH. BP 738 379, October 12, 1955. Through *BCIRA 36:* 372 (1956).

Coated nylon fabrics with low infra-red reflectance.

R. Hurd (to Imperial Chemical Industries Ltd). BP 738 831, October 19, 1955. Through *BCIRA 36:* 371 (1956).

Continuous process for bleaching cellulosic textiles.

Deutsche Gold und Silber Scheideanstalt. BP 738 903, October 19, 1955. Through *BCIRA 36:* 369 (1956).

Apparatus for handling materials in strand or rope form.

J. J. Franklin (to Proctor and Schwartz, Inc.). USP 2 742 143, April 17, 1956.

Process of reacting aminoalkylated cellulosic textiles with 8-hydroxyquinoline sulfonic acids and metals forming chelate rings and products thereof.

W. A. Reeves and J. D. Guthrie. USP 2 753 240, July 3, 1956.

Ravel proof edge.

W. F. Bird and G. S. Hiers (to Collins & Aikman Corp.). USP 2 753 597, July 10, 1956.

Ravel proof edge of plastic material for a cut carpet, such as an automobile carpet which has a complex peripheral shape.

Silica treatment of glass fibers and fabrics.

R. F. Caroselli (to Owens-Corning Fiberglas Corp.). USP 2 754 221, 224, July 10, 1956.

Application of finely divided silica to glass fiber surfaces is instrumental in delustering the fiber, reducing the slippage of the fibers in the fabric, permitting permanent coloring by conventional means, and producing a fabric characterized by softness and wrinkle and crease resistance.

Coated glass fabrics.

R. F. Caroselli (to Owens-Corning Fiberglas Corp.). USP 2 754 223, July 10, 1956.

Butadiene-acrylonitrile copolymer and polyacrylate protective coatings impart abrasion resistance to glass fibers and fabrics and improve fabric softness, feel, and wrinkle resistance.

Glass fabric laminates.

M. C. Brooks (to United States Rubber Co.). USP 2 754 237, July 10, 1956.

Laminates are made from glass fabric coated with polyester resins to give high flexural strength.

Tire cord adhesive.

S. B. Robison (to Esso Research and Engineering Co.). USP 2 754 239, July 10, 1956.

Cement for improving adhesion of isobutylene-diolefin polymers to fibers.

Wrinkle-resistant finish.

J. W. Stewart (to Monsanto Chemical Co.). USP 2 755 198, July 17, 1956.

Composition for producing a durable or stiffened, wrinkle-resistant, finish and/or design on cellulose fabrics, which is permanent to washing or dry cleaning.

DYEING AND PRINTING D 2

Process for dyeing or printing cellulosic textiles with sparingly soluble metalliferous dyes.

Ciba Ltd. BP 737 800, BP 737 803, BP 737 806, October 5, 1955. Through *BCIRA 36:* 370 (1956).

Fugitive tinting of cellulose acetate textile materials.

H. C. Olpin, A. McGill, and A. J. Wesson (to British Celanese Ltd). BP 737 886, October 5, 1955. Through *BCIRA 36:* 370 (1956).

Apparatus for design coloring of embossed fabric webs.

G. P. Feindel (to Rock Hill Printing and Finishing Co.). USP 2 752 881, July 3, 1956.

Process for fixing monoazo dyestuffs on a substratum.

C. Graenacher and H. Bruengger (to Ciba Ltd). USP 2 753 239, July 3, 1956.

Dyeing cellulose acetate.

V. S. Salvin (to Celanese Corp. of America). USP 2 754 171, July 10, 1956.

Process for dyeing in blue shades with azo dyestuffs, particularly naphthol dyestuffs, produced in situ.

Stripe printing of embossed fabrics.

H. B. Faulkner, Jr., T. E. Davis, and G. P. Feindel (to Rock Hill Printing & Finishing Co.). USP 2 754 796, July 17, 1956

Differential striping by the doctoring of the peripheral surface of a color applicator roll at spaced intervals.

Feeding means for a printing machine.

A. Giani (to Reggiani Meccanotex S.p.A.). USP 2 755 085, July 17, 1956.

A screen printing table for fabrics with rigid mechanical means for dragging the cloth over a section equal to the printing rate of the pattern to be obtained, and returning to its starting position.

MECHANICAL PROCESSES D 3

Photoelectric apparatus for automatically straightening the weft of fabrics.

J. Dalglish (to John Dalglish & Sons Ltd). BP 738 602, October 19, 1955. Through *BCIRA 36:* 372 (1956).

Web slitting machine having three spaced cutter knives engaging the web across its width.

H. H. Brooks (to Columbus Coated Fabrics Corp.). USP 2 747 666, May 29, 1956.

Stretching device for textiles.

H. Heitmüller and I. Etrich. USP 2 754 548, July 17, 1956.

A needle stretching device with two pairs of chains carrying needle supporting rods arranged on both sides of the material.

Burling machine.

W. N. Hadley (to Parks & Woolson Machine Co.). USP 2 754 565, July 17, 1956.

Mechanism for removing loose and long threads and lifting the short thread ends, knots, and other defects to the surface of a woven fabric for subsequent shearing.

Tension-calendering.

W. J. Secrest (to Firestone Tire & Rubber Co.). USP 2 754 883, July 17, 1956.

Apparatus for imparting a uniform tension to the warp cords of tire fabric by subjecting the cords to high and constant longitudinal tension during calendering.

DRYING D 4

Device for reducing noise in suction of textile fabric drying machines, paper-making machines or the like.

O. Thornycroft (to Bowaters Development and Research Ltd). BP 736 149, September 7, 1955. Through *BCIRA 36:* 256 (1956).

Drying oven for continuous fiber strands.

R. E. Moule. USP 2 745 190, May 15, 1956.

Apparatus for drying yarns running in parallel relationship in sheet form.

W. Bakker (to American Enka Corp.). USP 2 746 169, May 22, 1956.

TESTING AND MEASUREMENT E

YARNS E 2

Electro-mechanical lap uniformity tester.

F. P. Strother (to West Point Mfg. Co.). USP 2 740 200, April 3, 1956.

Apparatus for continuously determining mass per unit length of yarn or the like.

J. S. Seney (to E. I. du Pont de Nemours and Co.). USP 2 744 408, May 8, 1956.

Printing device for inspecting and recording the appearance of threads and yarns.

F. H. Germans and W. Voogt (to Nederlandse Organisatie Voor Toegepast-Natuurwetenschappelijk). USP 2 752 782, July 3, 1956.

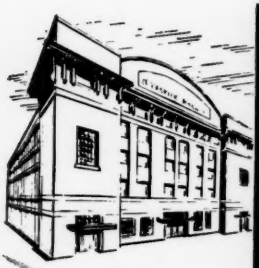
FABRICS E 3

Apparatus for measuring stretch or shrinkage in material passing through a processing machine.

J. B. Collins (to Firestone Tyre and Rubber Co. Ltd). BP 738 748, October 19, 1955. Through *BCIRA 36:* 372 (1956).

Apparatus for determining textile irregularities by analysis of sound waves produced by rubbing action.

W. J. Thorsen. USP 2 752 781, July 3, 1956.



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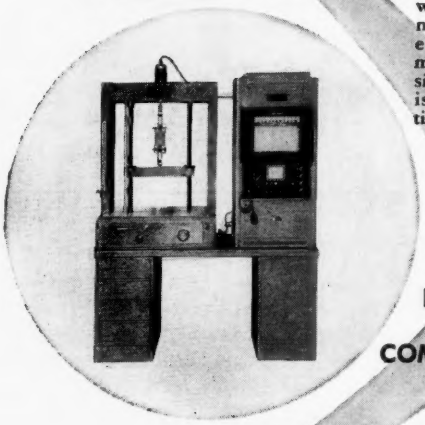

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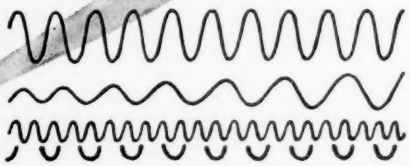

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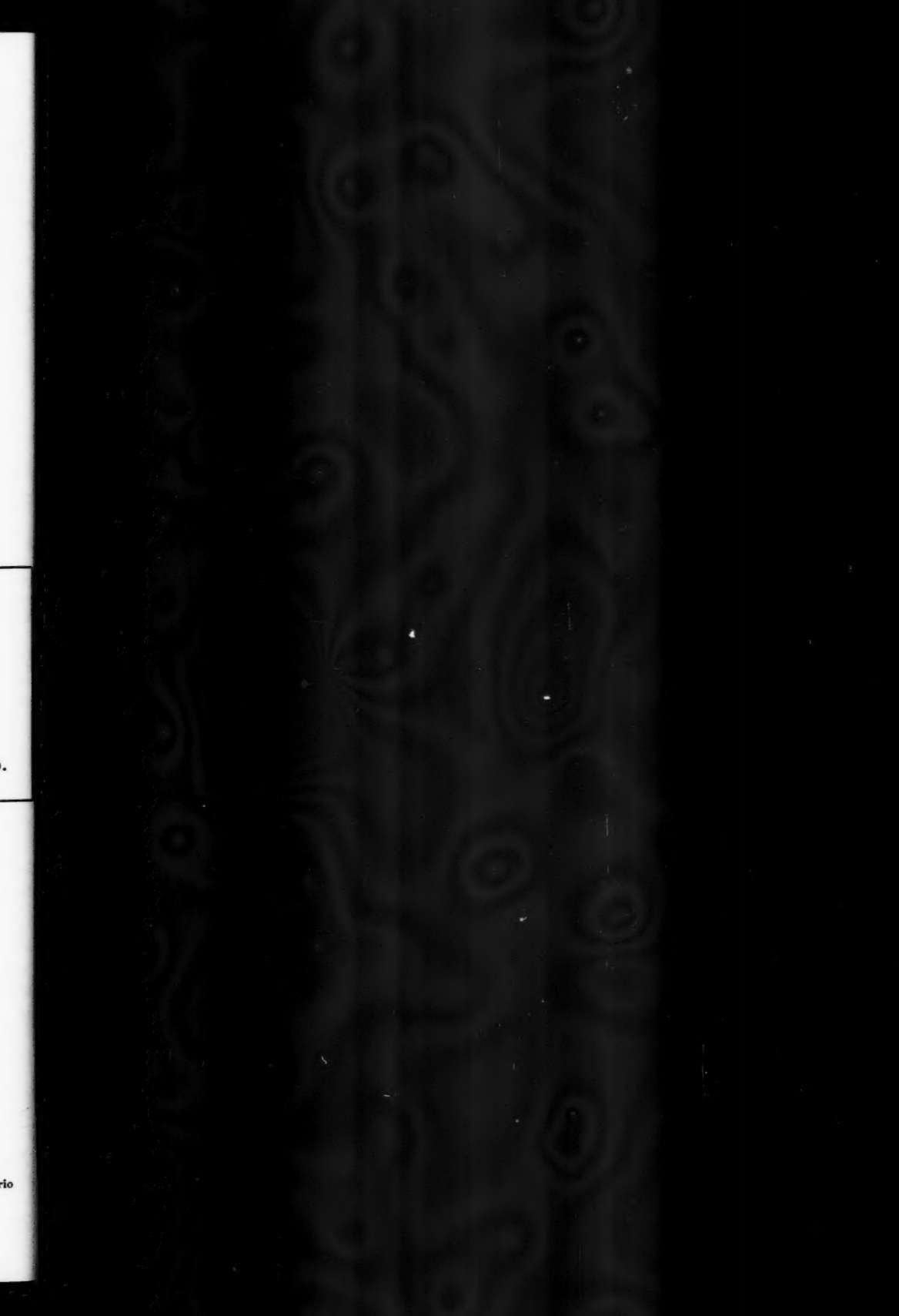
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